

# FOOD *and* NUTRITION

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# FOOD AND NUTRITION

## THE FOOD WE LIVE BY

Eating is such an essential part of our lives that we tend to take it for granted. To-day, however, food has become a question of world-wide importance, and its production, distribution and use are major problems.

It is not a matter only for the experts; we, too, can do our part in seeing that the health of the country is maintained and improved by good nutrition. Food provides substances for building our bodies and we cannot expect a first-class product if we use inferior building materials. Prevention is better than cure. It is surely more economic to devote energy and money towards developing healthy citizens than to expend them after ill-health has taken its toll.

Good health means more than the mere absence of disease; it is a more positive state of well-being, resulting in more efficiency, "pep" and vigour, better appearance, and the end of chronic fatigue. It helps to assure a sound physical heritage for the next generation.

Even in Australia, where a wide variety of foods is available, many households are not well fed, although most are getting enough to eat. This was revealed by a survey carried out in 1944 under the direction of the Nutrition Committee of the National Health and Medical Research Council of Australia.\* In particular, it was found that a significant proportion of families was not getting enough calcium, and the intake of vitamin B<sub>1</sub> and C was considered to be low. The report states: "In general, the conclusion to be reached as a result of the survey is that while there is no lack of sufficient quantity of food in the dietaries of the Australian people, the levels reached are not uniformly satisfactory, and much improvement could be achieved in the quality of food intake in some sections of the community. Though all, apparently, obtained sufficient to eat, many did not eat enough of the right kinds of food."

A wider knowledge of nutrition is required if we are to be aware of the kind of food, as well as the amount, that is needed. The farmer can do his part by using methods that will produce the best quality crops, the housewife can assist by choosing the best foods and storing and cooking them in ways that will conserve their nutriment to the utmost. The housewife is a most important person, for the health of the family is in her care, and her task will be carried out more effi-

\* *(The Food Consumption and Dietary Levels in 2,730 Australian Family Households in 1944. N.H. & M.R.C.—Special Report Series, No. 1, page 63.)*

ciently if it is based on a sound and practical knowledge of food values.

Eating the "right kinds of food" certainly does not mean giving up our favourite dishes and eating tasteless mixtures simply because they are good for us. While we must eat to live, we should also regard food as something to be enjoyed.

## Meal Planning Guide

A variety of foods chosen from the groups listed below will provide all the nutrients considered necessary for an adequate diet.

This list of food groups does not represent absolute food requirements but a practical guide to menu-planning.

Although it is possible to consume a nutritionally adequate diet that does not include all of these groups, it is difficult to provide meals that are nutritious and also acceptable to most Australians, unless these groups are included.

USE ONE OR MORE ITEMS FROM EACH GROUP DAILY.

FOOD GROUP	SUGGESTED AMOUNT
<b>MILK</b> Use milk in any form: Fresh, dried, evaporated, in drinks, in cooked dishes, or as cheese.	Children: 1-1½ pints. Adolescents: 1½ pints. Adults: ½ pint. Pregnancy: 1½ pints. Lactation: 1½-2 pints.
<b>MEAT</b> or Other Protein Food. Meat, poultry, rabbit, fish, eggs, cheese.	At least one serving, preferably some at each meal.
<b>VEGETABLE AND FRUIT</b>	1 serving of potato and 3 servings of other vegetables or fruit.
<b>BREAD AND CEREALS</b> Brown or wholemeal bread, white for variety. Oatmeal or wheatmeal porridge. Flour and other cereal products.	
<b>FATS</b> Butter or table margarine.	½-1 oz.

In addition to these foods, extra items such as sugar, flavourings, cooking fat, condiments, tea and coffee may be used to add interest and variety to the diet.

**How Do We Choose Our Food?** For most people, the choice of food depends upon appetite, food habits, and the amount of money available.

Appetite is a good guide to the amount of food we need, but it tells us nothing about those essentials in foodstuffs that make the difference between being merely "not sick" and really healthy.

Food habits play a very large part when we choose our food; they have been developing all through our lives, and like any habits, they are difficult to change once they become established.

There is no doubt that many people do not have an adequate diet. For families on low incomes a knowledge of food values is particularly important so that whatever money is available is spent to good purpose. On the other hand, malnutrition can be found in households where plenty of money is spent on food.

In choosing the foods that we eat day after day we must consider the needs of our bodies.

## **The Work Food Does in the Body**

1. It provides CALORIES.
2. It REPAIRS worn-out tissues and provides for new GROWTH.
3. It REGULATES the various processes of the body.

We can divide foodstuffs into groups to correspond with these functions.

1. FOODS HIGH IN CALORIES — CARBOHYDRATE (i.e., sugars and starches) and FATS.
2. BUILDING foods or PROTEINS: meat, fish, egg, cheese, milk.
3. BODY REGULATORS — MINERALS, VITAMINS AND WATER:

*The five food groups—*

- Milk and milk products.
- Meat or other protein food.
- Vegetables and fruit.
- Bread and cereals.
- Fats.

**How Much Energy Do We Need?** A certain amount of energy is needed for the day's activities. It is needed for work and for play, and for internal processes such as breathing and digestion. Even during sleep, some energy is used up by the body. Children, in proportion to their size, need greater resources of energy for growth and activity.

This energy is measured in CALORIES, which are simply units of measurement just as inches or gallons measure length or capacity. Calories are not a constituent of food; they measure the amount of energy a food will provide.

All foods provide some calories, but foods rich in carbohydrates and fats yield more than others. Because of this they are known as energy foods.

Calorie Values		Calories per Oz. (Avge. Figures)	Calorie Values	Calories per Oz. (Avge. Figures)
HIGH CALORIE FOODS	Fats	Dripping, etc. .... 250	Fruits (continued)	Figs, passionfruit, cooked dried apricots (no added sugar) .... 22
	Butter .... 210	Chocolate .... 150		Bananas, cooked prunes (no added sugar) .... 28
	Sugars	Sugar .... 112		Raw prunes .... 77
	Glucose, honey, syrup	90		Currants, raisins, dates, sultanas .... 88
	Jam .... 70			
	Cereals	Biscuits .... 125		Vegetables
	Bread .... 70	Flour, cereals .... 100		Cucumber, marrow .... 2
	Spaghetti, macaroni, rice (cooked in water) .... 26			Beans, cabbage, cauliflower, lettuce, onions, spinach, swede, celery, radish .... 7
	Cooked Meat	Medium fat .... 87		Brussels sprouts, carrots, pumpkin, beetroot .... 13
	Lean, no visible fat .... 64			Peas, parsnips .... 20
Fish	Most fish .... 30			Potato, corn .... 26
	Fatty fish (Mullet) .... 50			Sweet potato .... 39
Fruits	Melon, rhubarb, tomatoes	6	Miscellaneous	Marmite, vegemite, meat extracts, vinegar .... 0
	Oranges, grapefruit, pawpaw, peach, apricot, nectarine .... 11			Milk .... 20
	Apples, cherries, pears, grapes, pineapple, plums	17		Dried Fruit .... 70-80
				Nuts .... 160
				Egg .... 80 per egg
				Cheese .... 118

The calories that are needed in a day cannot be stated as a fixed figure; they vary according to our age, sex, size and physical activity and depend, too, on the way each individual's body functions. Two people may appear to eat the same amount of food, and yet one stays thin while the other puts on weight. We can, however, give figures to show the approximate number of calories needed by people of various age groups. A healthy man of 25 years, of average build and constant weight who is occupied in light industry will require approximately 3,000 calories per day. Women usually need fewer calories than men. A healthy woman of 25 years similarly occupied requires only 2,200 calories.

As men and women grow older, they need less food because of lessened physical activity. Some older folk become overweight because they continue to eat the meals they have become accustomed to, while their basic bodily needs have decreased. In general, a reduction of approximately 100 calories should be made for each ten years increase in age. Older people who do not reduce their activity to the usual level will require to reduce their calorie intake only in proportion to their reduction of activity. It is important, however, for older people to continue to have the nutritious foods recommended while reducing the total amount of food eaten.

Body size and general build do influence caloric requirements, but muscular activity is probably the most important factor. A man whose job involves heavy physical work will need many more calories

than if he works sitting down all day. Mental or "brain" work requires very few calories compared with muscular activity. A woman doing heavy housework will need more calories than one who does not exert herself much.

In proportion to their size children need more calories than adults do; they are usually more active than adults. A child of ten, for instance, will probably require 2,300 calories, yet for his less active mother, 2,100 may be sufficient. Adolescents in particular need extra food because the rate of growth is fast during these years. The insatiable appetite of boys and girls in their teens often seems to cause their elders some concern, but when it is realised that a boy in his late teens needs about 3,600 calories, it will be seen simply as the normal expression of their increased caloric requirements.

In general, if a person's weight remains fairly constant at approximately the average level, he may assume that his calorie requirements are being met, but not over-supplied. If more petrol is put into the tank of a machine than is required for the journey, the excess is stored for future use. In the same way, if the body is provided with more calories than are needed for the day's activities, the excess may be stored in the tissues in the form of fat, and the weight increases. If the food intake is too low to balance the day's activities, the reserves of fat are drawn upon for extra calories and the person loses weight.

It is advisable for any person needing to increase or decrease his weight to follow the appropriate diets as listed on pages 43 and 45. Following these diets is preferable to planning a diet solely by studying a calorie chart; a diet must contain sufficient protein, minerals and vitamins as well as the required number of calories.

## ENERGY FOODS

Carbohydrates and fats are the most commonly used foods and the cheapest sources of calories.

**Carbohydrates** may be divided into—

- (1) Sugars.
- (2) Starches.
- (3) Cellulose and related materials.

**SUGARS** are sweetening agents, and include glucose, sucrose (ordinary cane sugar), lactose (the sugar contained in milk) and fructose (the sugar in fruit).

**STARCHES.** Plants store most of their carbohydrate in the form of starch. Cereal grains and root vegetables contain large amounts of starch.

**CEREALS**—Wheat, oats, rye, barley, rice, corn.

**CEREAL PRODUCTS**—Flour, bread, biscuits, cakes, porridge, breakfast cereals, macaroni, spaghetti, semolina, malt.

**VEGETABLES AND FRUIT**—All vegetables and fruit contain carbohydrates in varying amounts. Dried fruits have a high sugar content because of loss of water in the drying

process. Sago and tapioca are starchy foods prepared from plants.

Although the potato may be called a starchy vegetable it contains much less starch than many other foods. Potatoes are about 20% carbohydrate or starch, while sugar, for instance, is 100%, cakes and biscuits about 70% and bread 50%. Those who want to reduce by cutting down starchy foods can do without sweets, cakes and biscuits, but there is no need to omit potatoes and miss out the valuable minerals and vitamins that they provide.

**CELLULOSE** and related materials comprise the stiffer structure of vegetables and grain products. Cooking softens cellulose, but it is only digested by humans to a very small extent. Cellulose, however, is of some value for giving bulk to the diet.

**Fats.** Fats are even richer sources of energy than starchy foods or sugars. Weight for weight they provide more than twice as many calories as protein foods or carbohydrates. Fuel for energy is stored by plants as starch, but it can be stored in a more economical manner by animals in the form of fat. Fats are the most concentrated energy foods.

Twenty to thirty per cent. of the day's energy requirements is usually provided by fats, which occur in foods as visible and invisible fats. The visible fats are butter, fat on meat, cream, lard, dripping, margarine and oils. Many foods, however, contain considerable quantities of invisible fat—for example, milk, cheese, egg yolk, and even lean meats. The avocado pear, unlike other fruits or vegetables, contains some fat (about 15%).

Table margarine, which is made from vegetable oils, is fortified with vitamin A during manufacture, and can be substituted for butter. Cooking margarine is made mainly from animal fats and is not fortified. It is, therefore, not a substitute for butter nutritionally but is a useful fat for cooking purposes.

A fat is solid or liquid at ordinary temperatures according to its melting-point. Fats in liquid form are known as oils. For example, dripping is a solid fat and olive oil is a liquid fat.

Fats add flavour to food, and as they tend to delay digestion, a meal containing fat gives a feeling of satiety. Finely divided fats such as those in milk and egg yolk are the most readily digested.

When foods are fried they become coated with fat and so make it more difficult for the digestive juices to penetrate them easily. For young children and those with poor digestions fried foods, rich pastries and fatty meats should be excluded from the diet.

## **BUILDING FOODS OR PROTEINS**

Protein foods are important because they supply material for growth and repair of the body tissues. All living tissues whether animal or vegetable, contain a certain amount of protein.

**Proteins for Growth and Repair.** Proteins furnish the body with the materials for building new body tissues such as muscles, nerves, glands and skin, and for keeping them in repair.

With adults protein is required mainly for the upkeep and maintenance of the body; there is a certain amount necessary for growth because cells are constantly being broken down and requiring replacement.

The protein requirements of children are high because they are growing rapidly. In proportion to their size they need twice as much as adults.

An expectant or nursing mother requires more protein, too, to nourish and provide for the growth of the child.

**Protein as a Source of Energy.** If insufficient food is eaten protein will be used by the body to provide calories at the expense of growth. Provided the diet is adequate any excess of protein foods which we eat above our requirements is converted into calories. Protein foods are usually the most expensive, so it is not economical to eat more than we need for body building.

**Protein Foods.** Proteins are of two types (animal or vegetable) according to their source.

**Animal proteins are:** Meat and fish of all kinds, milk, including dried milk and dried skim milk, cheese and eggs.

**Vegetable proteins** form a proportion of all plants. Grain products, nuts and legumes, such as dried peas and dried beans, contain considerable quantities of protein.

Proteins from animal sources are very good for building body tissues, as they contain the right "building stones" in the correct proportions. For this reason they are often called "first-class" proteins. Proteins from vegetable sources are also valuable, particularly when they are supplied by a good mixed diet. In the usual Australian diet pattern, a proportion of the protein should be obtained from animal sources.

**Requirements of Protein.** The amount of protein needed by each of us varies according to our physical condition. Older children, adolescents, and expectant or nursing mothers need more protein than the normal adult and this extra protein is best supplied in the form of extra milk and other protein foods. In fevers and some wasting diseases, too, the protein needs are greatly increased. People doing heavy work do not require more protein foods than those doing light work, but they do require more food high in calories.

A good start towards meeting the normal adult's need for protein is made if the following foods are included in the meals each day—

$\frac{1}{2}$  pint milk.

1 egg or 1 oz. cheese.

1 serving of meat, fish, rabbit or poultry.

Bread, porridge and vegetables will make up the balance of the daily needs.

Some people worry unduly lest they eat too much protein. In the past it was considered harmful to eat an excessive amount of protein, but recent research does not support this view. Experiments show that a large amount of protein can be taken without any ill-effects or strain on the kidneys. It is not wise to restrict your protein intake unless your doctor orders it. Restricting these essential building foods usually does more harm than good.

## MINERALS

There are many minerals in the human body. Some of them are present only in traces, but others are present in considerable amounts. Certain minerals are essential for growth and tissue building. They are used in building bones and teeth, muscles, hair, nails, and the soft tissues of the body. Some minerals are also essential for the regulation of body activities.

**Where do we get our Minerals?** We depend on the food we eat to supply minerals. Our requirements are small, and providing we eat a wide variety of foods, including the recommended foods in sufficient quantity, our requirements for all minerals will be met. With inadequate diets or in certain conditions there may be a shortage of calcium, iron, and in some districts, iodine.

Minerals are not destroyed by cooking, but as they dissolve in water they may be lost if foods are soaked for long periods, or if the liquid in which foods are cooked is not used.

**Calcium.** Calcium is of great importance for the development and growth of the bones and teeth. It is also necessary for the normal clotting of the blood, and helps us to use our muscles.

**Calcium Requirements.** Children, because they are growing and forming new teeth, need more calcium than adults, with the exception of pregnant women and nursing mothers. If this mineral is not supplied children will not grow normally and may develop rickets. During pregnancy, if supplies of calcium are not adequate for mother and child, the mother will draw on her own reserves and her health may suffer.

**Foods Rich in Calcium.** Although many natural foods contain small quantities of calcium the only really rich sources are milk and cheese. Egg yolk, green leafy vegetables and dried fruits contain smaller amounts. Fish supplies some calcium, especially those with edible bones such as sardines and tinned salmon.

Without milk and cheese in the diet it is almost impossible to eat the bulky quantities of other foods necessary to fulfil our calcium requirements.

The calcium in milk and cheese is in a form that is readily used by our bodies. Skim milk, buttermilk and dried milk are all as rich in calcium as fresh whole milk.

Although some foods, such as wholegrain cereals and spinach,

contain relatively large amounts of calcium, they also contain substances which prevent the calcium from being absorbed.

**Iron.** Iron is necessary for the formation of haemoglobin, the red compound in the blood. It is haemoglobin which transports the oxygen we breathe from our lungs to all parts of our bodies. If we do not obtain sufficient iron in our food we become anaemic and tired and listless. In men the normal loss of iron is very small. In women, however, menstruation is responsible for much larger losses, and in pregnancy when stores of iron are being built up in the unborn baby, the demands for iron are still greater.

**Sources of Iron.** There are not many foods that are valuable sources of iron. Many foods contain some iron, but it is often in forms that the body cannot absorb or utilise. For this reason the foods that are good sources should be eaten regularly.

The liver of all animals is by far the best food source of iron. Kidneys and heart are good, and all lean meats contain some iron. The next best sources are egg yolk, dried fruits and nuts, treacle and green leafy vegetables. Milk, which is such a valuable source of calcium, contains very little iron.

Although it is recognised that iron is an essential element for man, no specific amounts are given as recommended allowances because it is considered that the information available regarding iron metabolism is not sufficient to justify the adoption of any precise values. Normal healthy persons should obtain an adequate intake of iron from a mixed diet containing a variety of foods; those suffering from anaemia related to an iron deficiency will require supplements of iron in medicinal form.

**Iodine.** We need iodine in very small amounts for the correct functioning of the thyroid gland. When iodine is too scantily supplied by the foods or the drinking water the thyroid gland may become enlarged. This condition is known as goitre and it causes all body processes to be retarded. Adolescent girls and pregnant women are especially subject to goitre and need adequate supplies of iodine. Salt water fish, and other sea foods, are the only worthwhile food sources of iodine. In areas known as "goitre belts," where the water and soil are deficient in iodine, iodised salt should be used.

## VITAMINS

Vitamins, which are essential for health and growth, are chemical substances found in very small amounts in foods.

About 50 years ago scientists discovered that animals that ate plenty of pure proteins, carbohydrates, fats and mineral salts became gradually weaker and eventually died. It had long been known that lack of fresh foods caused people to die from scurvy and that a diet consisting entirely of polished rice would cause beri-beri.

The word "vitamin" was coined in 1913 to define these substances which are essential to life and occur in natural foods. Since then

many vitamins have been isolated and studied, and now they are frequently known by their chemical names rather than the alphabetical classification originally given to them.

**What Vitamins Do.** There are various kinds of vitamins and all perform some specific function in our bodies and all are essential for normal growth. Some are necessary to protect the various body tissues, some to build up resistance to infection, some to help the eyesight, and others to enable us to digest our food.

There are at least 16 known vitamins and others have still to be identified. Some of these the body is probably capable of making for itself. The "protective foods" that is, fruit, vegetables, dairy products, eggs, meat and wholegrain cereals, provide all the vitamins that are known to be essential to the body.

**Vitamin A.** We can use vitamin A in two forms, as vitamin A, or as provitamin A or carotene.

Vitamin A is associated with fats or oils, and carotene, which is converted by the body into vitamin A, is found in fruits and vegetables. Carotene is the yellow colouring in carrots and it is also present in green vegetables, especially dark ones such as spinach.

**The Functions of Vitamin A.** As vitamin A is necessary to promote natural growth and development of the body the needs for it are high during pregnancy and lactation.

The mucous membranes are the linings of the nose, throat, lungs, digestive tract and other body surfaces. Vitamin A helps to keep these membranes in a healthy condition, and so protects the body from infection by germs.

A shortage of vitamin A in our food may affect the eyes and cause "night blindness," a condition in which the eyes are unable to adapt themselves quickly to changes in the intensity of light.

**Sources of Vitamin A.** Vitamin A is found in fats of animal origin, with the exception of lard and dripping. Milk, cream, butter, egg yolk, liver and cheese are good sources. As animals store vitamin A in the liver, liver and fish liver oils are excellent sources.

All the fruits and vegetables that provide carotene are green or yellow in colour. They include spinach, silver beet, broccoli, parsley, watercress, carrots, apricots, papaw, rockmelons and yellow peaches. Lettuce and cabbage also contain carotene, the darker outside leaves providing more than the pale green inner ones.

Vitamin A is fairly stable to heat and is not affected by cooking. Moreover, it cannot be dissolved in the cooking water.

**The B Vitamins.** What was originally thought to be one vitamin—vitamin B—proved on investigation to be a whole series of substances. There are at least 11 vitamins in this group and very often they occur in the same foods. The three most important members are thiamin (Vitamin B<sub>1</sub>), riboflavin (originally known as vitamin B<sub>2</sub>) and nicotinic acid (niacin).

All the vitamins of the B series are necessary for health. As the body can build up stores of the B vitamin only to a limited extent they must be supplied regularly in our foods. If we eat the recommended foods especially wholegrain products of some sort, and our milk quota, we can be sure of obtaining our vitamin B requirements. People doing heavy work, pregnant women and adolescents all require extra large amounts.

**Thiamin or Vitamin B<sub>1</sub>** is important for normal functioning of nerves and is vitally concerned with the utilisation of sweet and starchy foods. A shortage of thiamin in the diet is very quickly noticed, for it makes people irritable, depressed and nervy, and affects the appetite. When the shortage is extreme and long continued the disease known as beri-beri develops. Many prisoners of war in Japanese camps suffered from beri-beri as their diet consisted almost entirely of polished rice.

Dried yeast, wheatgerm, pork, wholegrain cereals, dried peas and dried beans, heart, liver, kidney and nuts are the best sources of thiamin. Other meats, milk and most fruits and vegetables contain some thiamin, but in small amounts. The outer or branny layers and the germ of cereals are the parts richest in thiamin, but when cereals are highly refined these are removed. Oatmeal and wheatmeal porridges are good sources of thiamin. Wheatgerm can be added to the unfortified ready-to-eat cereals to raise their thiamin content.

**Riboflavin** also plays a part in the digestion of carbohydrates. It promotes growth and is essential for good health. A lack of it in the diet causes premature ageing and certain skin and eye disorders.

Children, pregnant women and people doing heavy muscular work require additional supplies.

Liver, kidney, milk, meat, eggs, dried brewer's yeast, wheatgerm, green leafy vegetables and soya beans are the best sources.

**Nicotinic Acid or Niacin.** When people regularly eat a diet deficient in nicotinic acid a disease known as pellagra develops. It is characterised by a reddish rash on any skin exposed to light (e.g., arms and face), by digestive upsets and mental and nervous disorders. Nicotinic acid is found in meat, especially liver, in fish, dried yeast, wholegrain cereals, nuts and legumes.

**Vitamin C (Ascorbic Acid).** This is the vitamin found in fresh, raw vegetables and fruit. In the eighteenth century it was known that small regular doses of lemon or lime juice would prevent scurvy. Because lime juice became part of the standard rations for British sailors they were called "limeys." Just over 20 years ago scientists discovered that vitamin C was the factor in the juice that prevented scurvy.

Vitamin C helps to build sound teeth and gums, it builds up the body's resistance to infection and strengthens our blood vessels. Tiredness, listlessness, irritability and many other vague symptoms of ill-health are frequently caused by insufficient vitamin C in our food.

## VITAMIN C CONTENT OF COMMON PORTIONS OF VEGETABLES & FRUIT

1 cup: standard measuring cup, 8 fl. ozs. 1 tablespoon:  $\frac{1}{2}$  fl. oz.

Vegetable	Measure	Vitamin C mg.
Asparagus, cooked .....	$\frac{1}{2}$ cup	20
Beans, French, cooked .....	$\frac{1}{2}$ cup	5
Beetroot, cooked .....	$\frac{1}{2}$ cup	6
Broccoli, cooked .....	$\frac{1}{2}$ cup	60
Brussels Sprouts, cooked .....	$\frac{1}{2}$ cup	30
Cabbage, raw .....	$\frac{1}{2}$ cup	35
Cabbage, cooked .....	$\frac{1}{2}$ cup	20
Carrots, raw .....	1 whole, 5in. long	3
Carrots, cooked .....	$\frac{1}{2}$ cup	2
Cauliflower, cooked .....	$\frac{1}{2}$ cup	20
Celery, raw .....	3 stalks, 7in. long	5
Choko, cooked .....	$\frac{1}{2}$ cup	10
Cucumber, raw .....	6 slices	5
Kale, cooked .....	$\frac{1}{2}$ cup	35
Kohlrabi, cooked .....	$\frac{1}{2}$ cup	30
Lettuce, raw .....	2 large or 4 small leaves	8
Marrow, cooked .....	$\frac{1}{2}$ cup	3
Onions, spring, raw .....	6 small	10
Onions, mature, raw .....	$\frac{1}{2}$ tablespoon, chopped $\frac{1}{2}$ medium	1 10
Onion, cooked .....	$\frac{1}{2}$ cup	7
Parsley, raw .....	2 tablespoons, chopped	15
Parsnips, cooked .....	$\frac{1}{2}$ cup	6
Peas, cooked .....	$\frac{1}{2}$ cup	15
Peppers, green, raw .....	1 medium	290
Peppers, green, cooked .....	1 medium	220
Potato, new, cooked in skin .....	1 medium	35
Potato, boiled or baked .....	1 medium	15
Potato, boiled and mashed .....	$\frac{1}{2}$ cup	8
Potato chips, fried .....	8 chips, 4in. long	7
Pumpkin, cooked .....	$\frac{1}{2}$ cup	8
Silver Beet, cooked .....	$\frac{1}{2}$ cup	8
Spinach, cooked .....	$\frac{1}{2}$ cup	30
Swedes, cooked .....	$\frac{1}{2}$ cup	30
Sweet potato, cooked .....	1 medium	20
Turnips, cooked .....	$\frac{1}{2}$ cup	10

Fruit*	Measure	Vitamin C mg.
Apple, Sturmer .....	1 medium	30
Apple, other varieties .....	1 medium	15
Apricots .....	3 medium	10
Avocado .....	$\frac{1}{2}$ peeled	10
Banana .....	1 medium	10
Blackberry .....	$\frac{1}{2}$ cup	20

## VITAMIN C CONTENT OF COMMON PORTIONS OF VEGETABLES & FRUIT (Continued)

Fruit*	Measure	Vitamin C mg.
Cherry .....	1 cup, with stones	5
Currant, black .....	$\frac{1}{2}$ cup	165
Currant, red .....	$\frac{1}{2}$ cup	20
Fig .....	6 small	4
Gooseberry .....	$\frac{1}{2}$ cup	30
Grapefruit .....	$\frac{1}{2}$ medium	70
Grape .....	40 grapes or 1 cup	6
Honeydew melon .....	1 slice	40
Loganberry .....	$\frac{1}{2}$ cup	20
Mandarin .....	1 medium	25
Mango .....	1 medium	55
Nectarine .....	2 medium	20
Orange .....	1 medium	70
Papaw .....	$\frac{1}{2}$ cup diced, or { 1 small slice	70
Peach .....	1 medium	10
Pear .....	1 medium	5
Persimmon .....	1 medium	40
Pineapple (rough leaf or Ripley) .....	1 slice	35
Pineapple (smooth leaf) .....	1 slice	15
Plum .....	3 medium	7
Raspberry .....	$\frac{1}{2}$ cup	15
Rhubarb, cooked .....	$\frac{1}{2}$ cup	8
Rockmelon or Canteloupe .....	$\frac{1}{2}$ melon { $\frac{1}{2}$ cup, diced	60 25
Strawberry .....	$\frac{1}{2}$ cup	40
Tomato .....	$\frac{1}{2}$ medium { 1 small	30 20
Tomato, canned, cooked or puree .....	$\frac{1}{2}$ cup	25
Watermelon .....	$\frac{1}{2}$ slice—10 in. x $\frac{1}{4}$ in.	10

## FRUIT JUICES, FRESH OR CANNED

Vitamin C content in mg.

Juice	Per pint (20 fl. ozs.)	Per cup (8 fl. ozs.)	Per fluid ounce (2 tablespoons)
Grapefruit .....	230	92	11.5
Lemon .....	220	88	11.0
Orange .....	240	96	12.0
Tomato .....	110	44	5.5
Passionfruit .....	100	40	5.0
Pineapple .....	65	26	3.3

\* Values are for raw fruit unless otherwise indicated.

Although they contain some fruit juices as flavouring, bottled fruit syrups and cordials are not good sources of vitamin C.

Fruits and vegetables gradually lose their vitamin C after they are picked, especially if they are bruised or not stored in a cool place. Careless cooking also leads to loss of vitamin C. If a large amount of water is used, as much as half of the vitamin C content may be dissolved in the cooking water, and further losses occur if vegetables are overcooked or kept hot for long periods before being served.

Tomatoes are exceptional in that they keep most of their vitamin C when cooked or preserved, because of their acid content.

**Vitamin D.** Vitamin D is made by our bodies and providing we get enough sunlight the average person usually gets an adequate supply. It is especially important in the diet of young children, and during pregnancy and lactation, because calcium and phosphorus, the building materials for bones and teeth cannot be used without vitamin D. No matter how much calcium and phosphorus are supplied, without vitamin D they cannot adequately be utilised. Insufficient vitamin D can cause rickets, the bones become soft and misshapen and bow legs, knock-knees and pigeon chests result. Mild forms of rickets are seen all too often in this country, where we have sunshine for most of the year.

The body can manufacture its own vitamin D by the action of the ultra-violet rays in sunlight on the skin. The only significant food sources of vitamin D are fish-liver oils and oily fish. Milk, butter and eggs supply smaller amounts.

Babies and small children should get regular supplies of vitamin D through exposure to sunlight. When this is not possible, they should be given cod liver oil or another fish-liver oil preparation each day to ensure an adequate supply of vitamin D.

**Other Vitamins.** Vitamins A, the B group, C and D are at present considered the most important from the nutritional standpoint. Other vitamins, e.g., E. P. and K, are known, but providing we eat the recommended foods we will get them in adequate quantities.

**Vitamin Preparations.** Vitamin concentrates or patent preparations fortified with vitamins are becoming more common as scientists discover simple methods of making vitamins synthetically. They are of importance in deficiency diseases and are frequently prescribed by doctors. Synthetic vitamins, however, should not be used indiscriminately; they are not necessary if a wide variety of foods is consumed. The proper way to obtain vitamins is from ordinary foods and not from tablets from the Chemist. The prescription of concentrates should be left to the physician.

## **WATER**

About 70% of the human body consists of water.

Water is continually leaving the body, in the air we breathe out from the lungs, in sweat from the skin, in urine from the kidneys, and in faeces from the bowel. From four to five pints of water a day are lost in this way, the amount varying according to the temperature and other conditions. This loss must be made up by our intake of water.

Water that is absorbed into the body tissues comes from drinks, from solid foods, and as a result of chemical changes in the body.

In general, the amount of fluid we need to drink daily varies from  $1\frac{1}{2}$  to 3 pints. For most people there is no need to consider the actual amount, as satisfying the thirst usually regulates this automatically. The fluids we drink may be in the form of water, milk, or any other beverages. Drinking with meals is seldom harmful; in some cases it hastens the digestion of food.

All solid foods contain some water. For instance, lettuce is about 95%, bananas 70%, mutton 50%, bread 36% and butter 16%, water. In general, half or more of the solid part of an ordinary meal is water.

The common belief that "water makes you fat" is a fallacy. Water yields no calories. It stays in the tissues for only a short time and is soon excreted.

## **Common Foods**

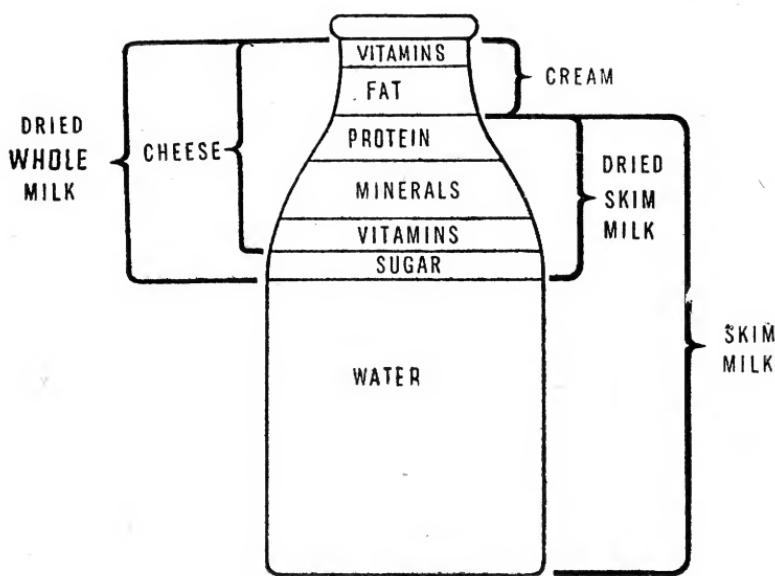
### **Milk**

Since milk is the food intended by nature to be the sole diet of the young animal in its early life, it is not surprising that it contains all the nutrients necessary for health and growth. As milk is about 88% water, it cannot be used indefinitely for adults without other foods, because of the large quantities that would be needed. As the foundation of a good diet, however, milk is unsurpassed for all ages.

Milk is easily digested, and a milk drink often helps to relieve acidity or indigestion. Milk is satisfying, too; tests have shown that it has a greater satiety value than any other food except meat.

**How Much Milk Do We Need?** Children need  $1\frac{1}{4}$  pints of milk every day; adolescents,  $1\frac{1}{2}$  pints; adults should have  $\frac{1}{2}$  pint a day and expectant and nursing mothers at least  $1\frac{1}{2}$  pints.

# THE COMPOSITION OF MILK



The **protein** of milk is of the highest quality. It is as good as the protein of meat and eggs, and superior to the protein of cereals and vegetables.

The **sugar** of milk is lactose. Lactose is not as sweet as ordinary table sugar but it is utilised in the body in the same way.

The **fat**, or cream, is present in a finely divided state; it is, therefore, easily digested. The yellow colour of cream and butter indicates the presence of vitamin A. The fat also contains vitamin D, which is necessary for the formation of teeth and bones. Cream is of benefit in some illnesses because it is an easily digested fat and its caloric value is high. For the normal person, however, cream is a pleasant luxury rather than an essential, for it lacks both protein and calcium, which are left in the skim milk after it is separated. Cream should never be regarded as a substitute for milk.

Among the **minerals** present in milk, the most important is calcium, the substance necessary for the growth and maintenance of the bones and the teeth.

Milk is not rich in iron, but is, nevertheless, an adequate food for a normal baby. The new-born baby carries a store of iron in his liver, provided his mother's diet has been adequate. When this store is used up the egg yolk, vegetables and meat that are added to his diet provide him with iron.

Milk contains all the known **vitamins**. As its vitamin C content, however, is not high, we cannot rely upon milk for this vitamin.

**The Care of Milk.** Milk is easily contaminated and it may be a source of infection unless it is handled carefully. Milk should be kept in a covered jug or bottle away from dust and flies and stored in an ice chest or refrigerator. It should not be allowed to stand in the sunlight as sunlight causes destruction of riboflavin and the development of off-flavours. Milk jugs or billy-cans should have straight sides, without joins or seams, so that they are easy to clean. Keep them scrupulously clean by rinsing them in cold water, washing in hot soapy water, and finally, scalding with boiling water. Stand the container upside down to drain rather than wipe with a cloth.

Milk for children under one year should be boiled; for older children pasteurised milk is suitable. Unpasteurised milk should be boiled for children up to the age of four or five years. Pasteurisation or scalding does not lower the nutritive value of the milk, except with respect to some vitamins, notably vitamin C. In any case, since milk is not rich in vitamin C we rely on other foods for it.

Pasteurisation, which is simply a process whereby milk is heated and then cooled quickly, does not "kill the goodness" in milk, but it does kill the harmful bacteria. Scientific experiments have shown that when two groups of children were fed raw and pasteurised milk respectively, no difference could be detected between the groups with regard to height, weight and chest development. It was also found that the children drinking pasteurised milk suffered from fewer milk-borne diseases.

## MILK PRODUCTS

**Powdered or Dried Whole Milk** can take the place of fresh milk since it contains all the important constituents of milk.

**Powdered Skim Milk** contains all the important constituents of milk except the fat and the fat soluble vitamins.

**Evaporated** unsweetened milk has had part of the water content removed. Sweetened **condensed** milk is similarly reduced, but sugar is added, and this makes it less useful as a substitute for fresh milk.

**Milk Equivalents:** 1 pint fresh milk; 3 oz. dried whole milk; 3 oz. cheese; 2 oz. skim milk powder plus 1 oz. butter.

**Ways of Using Milk.** Milk is nutritious, no matter how you have it—as a drink, hot or cold, in desserts, with cereals, in soups, or in dishes made with white sauce. **Ice-cream** is valuable because of its milk basis, but buying the commercial variety is rather a costly way of consuming milk; home-made ice-cream makes an economical sweet.

Similarly, for economy, **milk shakes** can be made at home. A plain milk drink is the easiest and cheapest way of having milk,

but for a mid-meal snack or for special occasions a fancy milk shake provides variety.

When fresh milk is in short supply, delicious milk shakes can be made with powdered milk. The flavourings and the beating effectively disguise the "powdered milk taste." Even when fresh milk is available, powdered milk can be added for extra richness.

Flavourings may be purchased ready to use, but in most cases it is cheaper to make your own. Vanilla, honey, golden syrup, cinnamon, caramel, chocolate and peppermint provide a wide choice. Some of these, such as caramel, are sufficiently sweet without extra sugar, but others need to have sugar added during the mixing. Ordinary crystal sugar is rather difficult to dissolve in cold milk, and it is more convenient to have some "liquid sugar" ready to use with the flavouring. This is useful, too, for sweetening the adults' iced coffee or iced tea. "Liquid sugar" may be prepared by adding 1 cup of sugar to  $\frac{1}{2}$  cup water, boiling for 5 minutes, cooling and storing in a covered jar or bottle.

## CHEESE

Cheese contains the valuable protein, vitamins and calcium of milk. In protein value an ounce of cheese is approximately equal to an ounce of meat or one egg, therefore cheese provides a good substitute for these foods. Cheese is digested quite easily so long as it is well chewed and is not overcooked. For young children it can be grated and served in sandwiches with salads, or on top of vegetables.

**How to Keep Cheese.** Soft cheese, well-covered, can be kept in the refrigerator or ice-chest. Dry cheese should be wrapped in a butter paper or a cloth or plastic wrapping material and kept in a cool place. A cloth moistened with vinegar and placed on the cut surface helps to prevent moulds from developing. If a mould does form it can be trimmed off and the cheese will still be good. It is a good idea to keep a supply of ready-grated cheese in an air-tight jar.

**Types of Cheese.** There are many different types of cheese, and it is worth while trying different kinds for variety. Generally speaking, they all have just about the same food value, whether they are processed and packeted, or sold by the pound. Dry block cheeses are the best for cooking as they have more flavour, and they are easier to grate.

When cheese is heated too much it becomes tough and stringy. It is better, therefore, to cook cheese dishes at a low temperature, or if a high temperature must be used, cook them for as short a time as possible.

**Ways of Using Cheese.** CHEESE SAUCE has many uses. First, make a white sauce, and when it is cooked add grated cheese ( $\frac{1}{2}$  to 1 cup of cheese to 1 cup of sauce). Heat it gently until

the cheese melts and blends smoothly. Do not allow the sauce to boil after the cheese is added.

Cheese sauce may be served with rice, spaghetti, fish, eggs, or with vegetables. Bland vegetables such as marrow, choko, pumpkin or cauliflower are specially good with cheese sauce. Another way of adding flavour to these vegetables is to mix grated cheese with breadcrumbs, sprinkle on top of the cooked vegetables, and brown under the griller or in a hot oven.

**GRATED CHEESE** can be used in omelettes and scrambled eggs, or sprinkled on top of vegetable soups.

## MEAT

Meat, the flesh of animals, including poultry and fish, is the most popular of the protein foods. The protein of meat, like that of milk, cheese and eggs, is of high quality and is readily digested.

Meat consists of bundles of fibres held together by connective tissue. The size of these fibres varies considerably in different animals and in different portions of the same animal, and greatly affects the tenderness of the meat. Meat from parts of an animal where the muscles are used a good deal has more connective tissue, and therefore, is tougher than that from other parts. Similarly, meat from older animals contains more connective tissue and is less tender than that from young animals.

Meat also contains fat, water, varying amounts of iron and B vitamins, and flavourings called "extractives." The younger the meat the more water it contains, and this helps to make it more tender; its flavour is milder than that of mature meat because there are less extractives.

Meat that has been hung for some days is more tender and flavoursome than freshly-killed meat because of the action of acids formed in it. Meat tenderisers are available which may be used according to the manufacturers directions. They do not affect the nutritive value of the meat.

There is little difference in the protein value of red and white meats, but red meats, particularly liver, kidney and heart contain more iron and B vitamins than white meats. Tripe and brains, while easy to eat and easily digested, do not provide any extra food value compared with red meats.

All types of meat have practically the same food value, with the exception of liver and kidney, but the cheaper ones require more careful and longer cooking.

Meat extracts, beef tea and clear soups are useful as appetizers because they stimulate the appetite and digestion. They have negligible food value, however, as most of the proteins are left in the discarded meat and only the pleasant characteristic flavours are dissolved in the water.

Meat is sometimes condemned on the grounds that it is harmful if eaten in excess. It is certainly not economical, but there is no evidence to show that it has harmful results. Eskimos live on a diet consisting almost entirely of meat and fish, with no ill effects. At least one serving of meat each day is desirable, and if it is not eaten, additional quantities of milk, cheese or eggs are necessary.

## EGGS

Eggs, like milk, are designed by nature to nourish the very young—in this case the young chick in the shell. Therefore, they are rich sources of the body-building material, protein, and of vitamin A. The yolk of an egg is the richer part; it contains high quality protein and fat, and is a valuable source of iron and vitamins A and B. The white of an egg consists almost entirely of protein and while it is not so valuable as the yolk, it is, nevertheless, a useful food.

Eggs are nutritious no matter how they are eaten, they are just as good in a pudding or savoury as when eaten alone.

There is no advantage in eating eggs raw; they are, in fact, more easily digested when lightly cooked. Custard powders are not a substitute for eggs in puddings because they are made almost entirely from cornflour.

The nutritive value of duck eggs is good, but they should never be eaten raw or lightly cooked. Duck eggs may carry bacteria that are harmless to the duck but cause illness in humans. They are safe if thoroughly cooked as in cakes or if boiled for four minutes.

## BUTTER AND OTHER FATS

Butter, which is made from the fat or the cream of milk, is a good energy food and a source of vitamins A and D. It is a popular fatty food because of its flavour, and because it is easily digested.

In calorie value there is not much difference between butter, dripping, lard and cooking margarine. These other fats, however, are not so rich in vitamins as butter. Table margarine has vitamin A added and is nutritionally a good substitute for butter. Fish-liver oils are excellent sources of vitamins A and D.

As a shortening, butter is often preferred for its flavour, but other fats such as lard and dripping can be used successfully in its place. Margarine can be used measure for measure to replace butter, but dripping and lard are used in smaller quantities—a level tablespoon less for each  $\frac{1}{2}$  cup of butter. To disguise the taste of dripping in baked foods, add a little lemon juice, or flavour with cocoa or spices.

## FRUITS AND VEGETABLES

Fruits and vegetables are the only foods that are rich sources of vitamin C. Some varieties are much better sources than others, and when fruit and vegetables have to be purchased it is advisable to use

those that provide the most vitamin C for the money expended. The vitamin C content of common portions of vegetables and fruit are given on pages 12 and 13.

Potatoes and other vegetables, particularly the leafy green varieties, are a significant source of vitamin C in the Australian diet. Potatoes boiled or baked in their skins provide a worth while amount of vitamin C; potatoes peeled and cooked in various ways contribute a lesser but still valuable amount of vitamin C.

Quick-frozen fruits and vegetables are excellent foods, as their vitamin C content is practically the same as when they are fresh. Canned vegetables and fruit lose a proportion of their vitamin C during processing, but no more than would be lost in cooking.

Dried fruits contain the same nutrients as fresh fruits in a more concentrated form, with the exception of vitamin C and some of the vitamin B<sub>1</sub>, which are destroyed in the drying process. When dried fruits are soaked in water they contain approximately the same constituents as when fresh. Since unsoaked dried fruits contain sugar in concentrated form they should be used sparingly for young children to avoid risk of tooth decay.

Dried apples, apricots, prunes and other fruits are useful for stewing as they require no preparation other than soaking.

Fruits and vegetables help to maintain the alkaline condition of the blood. Acid fruits such as oranges and grapefruit do not produce an acid reaction, because they form different combinations during the process of digestion. They do, in fact, help to reduce acidity.

The cellulose, or fibres, of fruit and vegetables, and the acids and salts they contain, help to maintain normal bowel activity.

**RAW OR COOKED?** It is advisable to include both raw and cooked vegetables in the diet. Raw vegetables and salads provide more vitamin C and fibres, while cooked vegetables are more easily digested.

## **PULSES**

Pulses are the seeds of various types of peas, beans and lentils. Dried pulses are good sources of protein and are rich in vitamin B.

## **NUTS**

Nuts contain a high proportion of fat and are not easily digested unless they are well-chewed or ground into a paste. Nuts contain protein, minerals and vitamin B.

## **CEREALS**

Cereals, the seeds of cultivated grasses, include wheat, oats, barley, rye, maize and rice. They contain approximately 70% carbohydrate, 11% protein, and 11% water and amounts of fat varying

from  $\frac{1}{2}\%$  to 8%, depending on the variety. Oatmeal is the cereal richest in fat.

Their high carbohydrate content, which is mainly in the form of starch, makes cereals a good energy food, and they are easily digested.

Wholegrain cereals are one of the best sources of vitamin B<sub>1</sub>. Most of the vitamin B<sub>1</sub> is found in the outer layer (the bran) and in the germ of the grain, and when cereals are refined most of the bran and the germ are removed. High baking temperatures, too, destroy vitamin B<sub>1</sub>. Thus unrefined cereals, such as wheatmeal and oatmeal porridge and unpolished rice, have more vitamin B<sub>1</sub> than refined or processed cereals, unless the latter are fortified. Wheatgerm products are rich sources of vitamin B.

BREAD is the most widely used of the cereal products. Wheat flour makes the best bread, but rye and corn are used extensively in some countries. Rye and corn breads are heavy and moist unless wheat flour is added, and they are less nutritious than bread made from wheat.

When wheat is ground into flour at the mill, varying amounts of germ and bran are removed, according to the degree of refinement required. The mill offals, containing some of the most valuable parts of the grain, are used for poultry and stock feed.

For wholemeal flour, the whole of the grain is used. For white flour the extraction rate in New South Wales is 70%—that is, 30% of the grain including the germ and bran is excluded from the flour. White flour, therefore, contains less protein, B vitamins, minerals and fibre than wholemeal flour. Australian wheats, however, do contain more vitamin B<sub>1</sub> than many other wheats, consequently, Australian white flour is a fairly good source of this vitamin.

On the other hand, wholemeal flour contains more phytic acid, a substance that prevents some of the calcium in the food from being used by the body. This factor is not important provided that the diet is adequate.

There are different standards for white, brown and wholemeal bread. White bread is made from white flour. Brown and wholemeal are made from a mixture of white flour and wholemeal flour. To comply with legal standards in New South Wales, "brown" bread should contain at least 50% wholemeal flour and "wholemeal" bread at least 90%. If these proportions are not adhered to the bread cannot legally be sold as "brown" or "wholemeal" as the case may be.

## **The Bread Controversy—Wholemeal or White?**

The question of which type of bread is preferable, taking into account palatability as well as food value, is a debatable one. White bread usually keeps better, it is finer in texture and it is easily digested and it provides some vitamin B<sub>1</sub>. Wholemeal and brown bread do not keep so well and are coarser in texture. Wholemeal bread contains more iron, protein and vitamin B<sub>1</sub> than brown, and brown contains more than white.

In short, while our white bread is a good food, brown and whole-meal are better. Under present conditions the brown loaf is recommended as a compromise between fine texture and high food value.

**Cereal Products.** Oatmeal is prepared by grinding oats. For rolled oats, the grains are flattened between rollers and slightly cooked.

Barley kernels are made by a process similar to that for rolled oats. Pearl barley is the polished grain of barley with the husks removed. Barley water contains very little nutriment.

The various ready-to-eat breakfast cereals are prepared from ground wheat, rice or maize which is made into a mash, flavoured, shaped and baked at a high temperature.

Cornflour is made from the starchy part of the maize; most of the protein is washed away. Many cornflours contain a proportion of wheat starch. Macaroni, spaghetti and semolina are made from wheat flour.

Arrowroot, tapioca and sago are not cereals. Arrowroot and tapioca are prepared from the roots of plants, sago from the pith of the sago-palm.

## SUGARS

Brown sugar, molasses, golden syrup and treacle are by-products in the refining of cane-sugar, and they have practically the same food value as white sugar. All types of sugar contain virtually no vitamins. The less refined, darker sugars contain more calcium and iron than white sugar, according to the degree of refinement. Molasses has the most, then treacle, syrup and brown sugar, in that order.

Other forms of sugar are glucose, honey, milk-sugar, fruit-sugar, maple syrup, beet-sugar, barley sugar, boiled sweets and toffee. All of these provide calories after they are converted to glucose by the digestive processes. As this conversion is a simple process, it is immaterial which type of sugar is used. Glucose is useful in special cases because it is less sweet than ordinary sugar; apart from this it has no advantages. The chief value of honey and treacle is to provide variety; it is not economical to substitute them entirely for sugar. Honey has no special food value.

Sugars are useful in the diet because they provide carbohydrate in a concentrated form that is pleasing to the palate, easily digested, and quickly converted to calories. A disadvantage is that they satisfy the appetite so easily that they are likely to displace essential foods. Sugar is a good energy food, but it is not essential, because we can get energy from other foods.

Excessive use of sugary foods such as sweets, sweet biscuits, cakes and sweet dried fruits tends to encourage tooth decay, particularly if the teeth are not cleaned immediately after eating. Once people become accustomed to eating lots of sugary foods it is often difficult to restrict the intake of sugar; it is better, therefore, not to acquire the habit.

## CONDIMENTS AND SEASONINGS

Although condiments and seasonings such as pepper, mustard, vinegar, cinnamon, nutmeg and flavouring essences contribute nothing in food value to the diet, they play an important part in our meals by improving the palatability of many foods. Food that is well flavoured is enjoyed and, therefore, is likely to be well digested.

Condiments, however, must be used with discretion. Pouring strongly-flavoured sauces indiscriminately on to food makes every dish taste the same and spoils the palate. Similarly, seasonings used in cooking should enhance the natural flavours of the food, not disguise them. If seasonings are added before or during the cooking process the flavours will be well blended.

## BEVERAGES

**Fruit Juices**, fresh or canned, are good sources of minerals and vitamins. (They should be kept in a covered container in a cold place.) Orange, lemon, grapefruit and tomato juice are valuable for their vitamin C. Pineapple juice contains less and grape and apple juice provide comparatively little vitamin C, but they contain some minerals and vitamins and make refreshing drinks.

Although fruit cordials and syrups contain a percentage of fruit juice they cannot be considered as a significant source of vitamin C.

**Tea.** Black tea consists of the young shoots of the tea plant fermented and dried. Green tea is not fermented. The chief constituents are caffeine and tannin. Caffeine, a stimulant, is quickly extracted when the tea is made, but tannin, which is bitter to the taste, passes into the infusion more slowly. Properly-made tea, that is tea that is brewed five minutes, should have no ill effects on the average person.

**Coffee** is made from the roasted beans of the coffee plant. It contains caffeine, a little tannin, and an aromatic oil, caffeoil, which gives coffee its characteristic aroma and flavour. Coffee gives a feeling of satisfaction at the end of a meal by slightly retarding the emptying of the stomach. Apart from their flavouring and stimulating properties, neither tea nor coffee without milk or sugar has any food value.

**Cocoa.** The seeds of the cacao tree, fermented and roasted, are known as cocoa-nibs. Part of the fat (cocoa-butter) is removed and the residue, finely ground, is made into cocoa. Chocolate is made from the ground cocoa-nibs, and therefore contains more fat than cocoa. Cocoa provides some nutrients and when made with milk is a nourishing drink.

## MEAL PLANNING

There is no need for people choosing their own meals or preparing meals for a family to count the calories or calculate the amounts of the various vitamins supplied by the day's food. On the other

hand, the choice of meals should not be haphazard, or some of the nutrients are likely to be too low for normal health and growth.

A variety of foods chosen from the groups listed below will provide all the nutrients considered necessary for an adequate diet.

## MILK

Use milk in any form—fresh, dried, evaporated, in drinks, in cooked dishes, or as cheese.

Children: 1-1½ pints.  
Adolescents: 1½ pints.  
Adults: ½ pint.  
Pregnancy: 1½ pints.  
Lactation: 1½-2 pints.

## MEAT of Other Protein Food

Meat, poultry, rabbit, fish, eggs, cheese.

At least one serving, preferably some at each meal.

## VEGETABLE AND FRUIT

1 serving of potato and  
3 servings of other vegetables or fruit.

## BREAD AND CEREALS

Brown or wholemeal bread, white for variety.

Oatmeal or wheatmeal porridge.

Flour and other cereal products.

## FATS

Butter or table margarine.

½-1 oz.

In addition to these foods, extra items such as sugar, flavourings, cooking fat, condiments, tea and coffee may be used to add interest and variety to the diet.

## MEAL PATTERNS

The next step is to decide on patterns that are suitable and convenient for the three meals and to see that the five food groups are included.

Most people need three meals a day, because it is difficult to get all these foods into one, or even two, meals a day.

### Breakfast.

Oatmeal or wheatmeal porridge with milk and/or egg, meat or cheese.

Toast or bread.

Butter or table margarine.

Tea, coffee or milk.

### Lunch.

Cheese, egg or meat.

Fruit or vegetable (raw or cooked).

Bread, preferably brown.

Butter or table margarine.

Extras, if desired—e.g., peanut butter, marmite or vegemite.

Tea, coffee or milk.

## **Dinner.**

- Meat or fish.
- Potato.
- Other vegetable.
- Dessert.
- Tea, coffee or milk.

Menu making is choosing the dishes you want to fill in the meal pattern. Meals planned ahead are much more likely to be adequate than those planned ten minutes before they are eaten. It is advisable to plan the meals for the day as a whole then check them to see that they contain the food listed in the Meal Planning Guide.

**Breakfast.** Tea and toast by themselves do not make a balanced breakfast, although toast may satisfy the appetite for the time being. This is not a good breakfast for anyone and usually leads to that "tired feeling" half way through the morning.

CEREALS have a high calorie value and may supply vitamin B, depending on the type of cereal used. Wholegrain porridges such as oatmeal and wheatmeal supply good amounts of vitamin B. If an unfortified packeted cereal is used it is a good idea to add a tablespoon of one of the wheatgerm products.

Provided sufficient milk is included in the meal, porridge or cereal makes an adequate breakfast.

FRUIT, raw, cooked or as juice, is refreshing and when eaten at the beginning of the meal stimulates the appetite.

EGG, MEAT, FISH or CHEESE being protein foods are sustaining and keep the hunger pangs at bay longer.

The housewife or the business girl should not get into the habit of doing without breakfast, even if she does want to reduce her weight. She will do better to modify this meal by having fruit, egg or meat, one slice of toast or bread, thinly spread with butter, and a beverage without sugar.

**Lunch.** Lunch eaten at home can be a simple meal that does not take long to prepare, and yet, is tasty and satisfying. The main dish could be either a hot savoury, a salad, or some sandwiches, but preferably it should include meat, cheese, egg or fish.

**Packed Lunch.** A lunch that is carried to school or work should be just as nutritious as one eaten at home. Sandwiches or bread rolls are the main part of most packed lunches. Wholemeal, brown or white bread may be used. Brown bread is recommended as wholemeal and brown bread provide more vitamin B than white bread.

Nutritious fillings are important and should not be skimped. At least one filling should be made from cheese, egg, meat or fish. Other good fillings are baked beans, peanut butter, raw salad vegetables,

fresh and dried fruits, nuts, and yeast and vegetable extracts. To give sufficient variety celery, parsley, chives, mint, lettuce, eschalots, tomato, grated carrot, onion or curry powder may be added to fillings. Mixtures are often tastier and more popular than plain fillings.

The consistency of sandwich fillings is important—they should be moist enough to prevent crumbling, but not so moist that they make sandwiches soggy. Mayonnaise, tomato juice, tomato puree, milk, fruit juice, left-over gravy or white sauce may be used to moisten fillings.

For a change, a hard cooked egg or a piece of cheese, a whole tomato or a salad may be packed in a jar and the bread and butter carried separately.

In winter a hot drink carried in a thermos makes a cold lunch more appetising.

For a school child a piece of fruit is recommended to finish the lunch. Milk should be included either with the lunch or at recess.

If a child buys his lunch, parents should make sure he spends his money on the right kind of food. Where there is a school canteen which serves the standard Oslo lunch, tasty and nutritious lunches are available at a reasonable cost.

**Lunch for the Worker.** A meat pie, with plenty of meat filling, or a bacon and egg pie makes a welcome substitute for sandwiches occasionally. Cakes and biscuits give variety to packed lunches but are not recommended for school lunches as they are often the first part of the lunch to be eaten, thus spoiling the appetite for the more important parts of the meal.

**Packing Lunches.** Careful packing of a carried meal is important in order to preserve its attractive appearance. The meal must be kept fresh and moist, and prevented from being squashed or broken.

Greaseproof paper or plastic wrapping material is essential for wrapping sandwiches, rolls and cake. A clean cardboard box or tin to hold the complete lunch protects it and keeps it in shape.

**Dinner.** The usual dinner pattern of meat or fish, potato, other vegetable and dessert is a good one. It is a good idea to introduce as much variety as possible in the meat and vegetables served.

The sweet gives a pleasant finish to the dinner. Puddings, cakes and pastries are usually popular with the family and provide ample scope for variety. Desserts that have the highest food value are those containing a protective food—milk, egg or fruit.

## MAKING MEALS ENJOYABLE

**Colour** is important in food. A meal that is made completely of white foods such as steamed fish, mashed potato and cauliflower does not look attractive. Green and yellow vegetables, sauces and garnishes can be used to advantage to add colour to the plate. A colourless pudding such as spanish cream, junket or ice cream, is much more attractive if garnished with chopped red jelly or a red cherry, or served with brightly coloured fruit or sauce.

**Texture.** A meal should not be entirely soft, nor entirely crisp. Something crunchy served with soft foods, such as celery with creamed chicken gives a good variety of texture.

**Temperature.** Hot food is appetising for winter meals and salads and cold desserts are more appetising in summer. Try to adapt your menu to suit the temperature, and if your roast dinner coincides with the beginning of a heat wave then cook the meat early and serve it cold with salad. Always remember to serve hot food hot and cold food cold.

**Mealtimes Atmosphere.** Emotions such as anger and fear inhibit the flow of gastric juice and slow down the digestion of food. On the other hand, pleasant emotions lead to more rapid digestion. All worries and disagreements should be forgotten at mealtimes. Enough time should be allowed so that meals can be eaten comfortably without rushing.

It has also been shown that fatigue disturbs the normal contractions of the intestinal tract—it really is possible to feel “too tired to eat.”

Congenial surroundings are important, too. An airy, well-lit room, sparkling cutlery and china, and fresh table linen all help towards a pleasant mealtime atmosphere.

**Variety.** Monotonous meals can spoil appetite. The same food should not be served the same way day after day; it is not a good idea, either, to have set dishes for certain days of the week.

Lists of dishes, favourite recipes and suggestions for variety are useful to help make family meals interesting. The housewife can make her own lists and refer to them when planning her meals.

## CHECK LISTS FOR REFERENCE

BREAKFAST DISHES	SAVOURY DISHES	DESSERTS
<b>Eggs.</b> Poached, boiled, fried, scrambled, omelette.	Spaghetti with meat balls. Baked Beans with tomato sauce.	<b>Cereals.</b> Milky rice, sago, tapioca.
<b>Cheese, toast.</b>	<b>Salads</b> with meat, cheese, egg or fish.	<b>Custards.</b> Baked, soft, steamed, bread & butter, cereal, sultana, queen pudding, trifle.
<b>Meat.</b> Lamb's fry, kidneys, chops, steak, sausages, rissoles, mince, brains.	<b>Cheese Savouries</b> Cheese and tomato. Macaroni cheese. Spaghetti with tomato and cheese. Vegetable pie with cheese pastry. Vegetable pie with cheese and potato top. Welsh rarebit.	<b>Fruit.</b> Fresh, stewed, baked, dried. Apple or other fruit with sponge top. Apple or other fruit brown betty. Crumbles, flummery or whips.
Bacon with tomatoes.		
Bacon with potato cakes.		
<b>Fish.</b> Steamed, fried, fish cakes, smoked fish.		<b>Gelatine.</b> Jellies, flummery.
		<b>Tarts and Pies.</b> Chocolate, custard, treacle, jam, fruit.
		<b>Flavourings and Sauces</b> Use chocolate, caramel, honey, coffee, vanilla, treacle or fruit sauce with
<b>MEAT DISHES</b>	<b>Egg Savouries</b> Curried eggs. Eggs in cheese sauce. Scotch eggs. Egg and bacon pie.	Custard, Spanish cream, junket, ice cream, blancmange, steamed puddings.
Roasts and grills, casseroles, stews, Aberdeen sausage, meat loaf, meat pie, crumbed cutlets, rabbit, tripe, oxtail.		

### MAKE EVERY PENNY COUNT

The housewife who wishes to get the best value for her money must apply her knowledge of food values, plan meals in advance and avoid waste. The foods listed in the Meal Planning Guide should form the basis of the family's meals. Other foods such as fats, cereals and sugars will provide calories and help to satisfy the appetite. The wise housewife learns to be a good cook, to prepare tasty meals and serve them attractively.

### MILK

**Powdered or Dried Milk** can take the place of fresh milk since it contains all the important constituents of milk. When purchased in the 3 lb. pack, dried milk is cheaper than liquid milk.

**Dried Skim Milk** has the fat and fat soluble vitamins removed but otherwise contains all the important constituents of milk, notably the protein and calcium.

Evaporated unsweetened milk has had part of the water content removed. Sweetened **condensed** milk is similarly reduced, but sugar is added, and this makes it less useful as a substitute for fresh milk.

**Milk Equivalents:** One pint fresh milk equals 3 oz. dried whole milk, 3 oz. cheese or 2 oz. skim milk powder plus 1 oz. butter or 1 oz. table margarine.

Butter and cream are not substitutes for milk; they are the fat portion of milk and they contain Vitamins A and D. The skim milk which remains after the fat is removed contains protein, minerals and some of the vitamins.

## MEAT AND FISH

The less expensive varieties of meat are just as good nutritionally as the more expensive roasts and grills. Stewing chops and steak, and mince, may be served in a variety of ways and if properly prepared and cooked are as appetising as any grill. Most of the sausage type of prepared meats are economical. The nutritive value of meat cooked in a pressure cooker is as good as that of meat cooked by other methods.

Meat tenderisers are available which may be used according to the manufacturer's directions. They do not affect the nutritive value of the meat.

Liver, kidney and heart are particularly valuable as they are rich in iron and Vitamin B. Special care needs to be taken that these meats are not overcooked and therefore unpalatable. Liver is a soft fibred meat that cooks in a very short time.

Fish may be served instead of meat if it is available and not too expensive. Fish bought whole gives about two servings to the pound, fillets of fish give four to five servings to the pound. Mullet and leather-jackets are generally the cheapest fish; garfish and redfish are worth buying when their price is not too high. Tinned fish cutlets are sometimes cheaper than fresh fish. They are useful combined with other foods to make such dishes as fish cakes, fish and potato pie and fish kedgeree.

Provided sufficient meat or fish is included in a dish to ensure adequate nutrition, cheaper foods such as rice or other cereals, potatoes or other vegetables, bread crumbs or dried beans may be used in savoury dishes to extend the meat or fish. This will help to satisfy the appetite as well as provide a more economical meal.

Meat and fish pastes, clear beef tea, chicken broth and meat extracts are tasty but are not nourishing and should not be substituted for meat or fish.

A man doing hard work needs extra calories but he does not need extra large servings of meat. The pregnant and nursing mother and the teenage boy and girl in the family need bigger servings of meat than the average adult.

## CHEESE AND EGGS

Cheese and eggs are good quality protein foods like meat (1 oz. meat is approximately equal in value to 1 egg or to 1 oz. cheese). Children up to five years should have an egg a day if possible. It does not matter how eggs are used, they are just as good in a pudding or savoury as when eaten alone.

There is no advantage in eating eggs raw; they are, in fact, more easily digested when lightly cooked. Custard powders are not a substitute for eggs in puddings because they are made almost entirely from cornflour.

All cheeses have just about the same food value, whether they are processed and packed or sold by the pound. Dry block cheeses are the best for cooking as they have more flavour, and they are easier to grate.

When cheese is heated too much it becomes tough and stringy. It is better, therefore, to cook cheese dishes at a low temperature, or if a high temperature must be used, cook them for as short a time as possible.

It is worth comparing the price of block cheddar cheese with the packet type, usually block cheeses are cheaper than packeted cheese.

## **DRIED PEAS AND BEANS**

SOYA, HARICOT and LIMA BEANS provide a good amount of useful protein, and for economy and variety these may be used as a meat substitute savoury or mixed with meat to extend it. Dried peas are also useful.

## **FRUITS**

Fruits that are richest in vitamin C are the citrus fruits, oranges, lemons, grapefruit and mandarins, the tropical fruits such as papaw, rockmelon and the rough-leaved pineapple, the berry fruits such as blackcurrants, strawberries and gooseberries, and tomatoes and passion-fruit. If possible plant one or two citrus trees in your garden.

Apples are a useful fruit, as they provide exercise for the gums and jaws.

Some fruits provide only small amounts of vitamin C but are worth using when they are cheap to give variety. These are water-melon, cherries, grapes, loquats, plums, pears and figs.

Quite often **dried fruits** are cheaper than fresh, e.g., dried apples, and these may then be used to advantage. Dried vine fruits are useful additions to the diet. During processing, dried fruits lose vitamin C and so are not complete substitutes for the fresh variety.

## **VEGETABLES**

If you have a garden it is a wise plan to grow your own vegetables.

Some vegetables are better value for your money than others; that is, they have a higher vitamin content. These vegetables are cabbage, spinach, tomatoes, cauliflower, brussels sprouts, broccoli, carrots, swedes, potatoes, peas and beans, and to a lesser extent pumpkin, lettuce and choko. Vegetables such as onions, parsnips, marrow, celery, cucumber and beetroot have a much lower vitamin C content but are useful for variety if the price is reasonable.

If lettuce is expensive, other green vegetables such as raw cabbage and spinach may be shredded and used as substitutes for making salads.

The food value of **tinned vegetables** compares favourably with that of the cooked fresh vegetable. Use them when fresh vegetables are more expensive.

Vegetables **frozen** by the "quick-freeze" method are also satisfactory, and sometimes are more economical than the fresh product.

**Home-bottling of Vegetables** is recommended only if a reliable pressure-cooker-canner is used. Other methods are not recommended because of the possible danger of botulism. Home-preserved fruit, tomatoes and rhubarb are safe because the toxin of botulism does not ordinarily develop in acid foods.

Information on home-bottling of vegetables is available from the N.S.W. Department of Agriculture.

## **WHOLEGRAIN CEREALS AND BREAD**

Wholegrain porridges such as rolled oats, oatmeal and wheatmeal contain more vitamin B and minerals than the refined porridges and the packeted unfortified cereals.

Oatmeal and wheatmeal sold loose are cheaper than the packeted porridges.

The quick cooking oat porridges contain as much vitamin B as rolled oats.

All bread, whether it be white, brown or wholemeal, is a good food, but wholemeal and brown bread contain more vitamin B and iron than white bread. Bread has a much greater nutritive value than sweet biscuits, cakes or lollies. However, a few plain non-sweet biscuits, such as wheatmeal, have a vitamin B content similar to that of white bread.

## **BUTTER AND TABLE MARGARINE**

**Table Margarine** is a satisfactory substitute for butter besides being considerably cheaper. It can be used in the same way as butter.

Cooking margarine cannot be considered a complete substitute for butter because it has no added vitamins but is a useful and economical fat for cooking purposes.

## WAYS TO USE LEFT-OVER FOODS

Cooked foods should merely be re-heated; they do not need to be re-cooked.

COOKED MEATS	COOKED VEGETABLES	BREAD
Curry.	Bubble and Squeak.	Bread and Butter Custard.
Meat in Batter.	Mashed Potato—heat and brown in oven or under griller.	Coating for Cutlets and Rissoles.
Meat Loaf.	Potato Cakes.	Dried Crumbs.
Minced with Spaghetti or Rice.	Salads.	Queen Pudding.
Mince on Toast.	Scalloped Vegetables.	Savoury Dishes.
Rissoles.	Vegetables au Gratin.	Toasted Sandwiches.
Sandwiches.	Vegetable Pie with Cheese Pastry.	Topping of Puddings and Savouries.
Shepherd's Pie.	Vegetable Rissoles—baked, fried or grilled.	Left-over porridge may be used to thicken soups and stews.
Stuffed Green Peppers.		
Stuffed Marrow.		
Stuffed Tomatoes.		
With Salad.		
With Hot Vegetables.		

## FOODS WHICH ARE POOR VALUE FOR THE MONEY

Some foods are not economical because in comparison with the price their food value is not high. These are:—

1. Ready cooked foods such as fish and chips, meat pies, tarts, biscuits, cakes, prepared meats and tinned soups. It is more economical to cook them yourself as you naturally pay extra for the preparation and cooking.
2. Prepared cake and pudding mixtures. Usually the chief ingredients are flour and flavouring.
3. Most cordials and syrups, even though some of these contain fruit juices; the amount of fruit juice is generally very small.
4. Mixtures for milk drinks or tonic foods are expensive. Plain milk or milk cocoa is adequate and much cheaper.
5. Meat pastes and fish pastes and some luxury tinned foods.

## HINTS FOR PRUDENT SHOPPING

1. Shop in person. Children can be sent for standard lines, but it is better to shop yourself where judgment of values and price is needed.
2. Compare the prices of different brands of groceries, noting the weight of the contents marked on the label.
3. Compare the cost of buying particular items in small quantities or in bulk. Provided the food keeps well and you have enough storage space, it is generally less expensive to buy the larger quantity.
4. Be on the lookout for "specials" or gluts of fruit or vegetables.

## FOOD STORAGE

All food storage cupboards and shelves should be clean and tidy. Old stocks should be brought to the front of the shelves and used before new stocks are opened.

**Milk:** All utensils, such as jugs, used for milk should be thoroughly clean and free from chips and cracks. Rounded edges and corners are easier to clean than sharp ones. Milk is best kept covered in a refrigerator or ice chest, and it should be stored away from foods with a strong flavour as it absorbs flavours easily.

**Butter** should be kept in the refrigerator or ice chest.

**Eggs** absorb flavours, even through the shell. They should be stored in a cool place, or in a refrigerator or ice chest if space permits.

**Cheese** should be kept wrapped, preferably in a refrigerator or ice chest. Storing in a screw-top jar or plastic wrapping material will prevent it drying out.

**Meat** should be stored on clean trays or plates in the coldest part of the refrigerator or ice chest. Cuts of meat should not be closely packed nor lie in their own juices. Cooked meat needs to be covered to prevent drying out.

**Vegetables** should be stored in a cool, well-ventilated spot, preferably on a rack.

**Cereal products** should be stored in clean dry containers. Cereals may become weevil-infested in early spring and summer so it is not wise to keep large stocks on hand then.

## COOKERY AND FOOD PREPARATION

A good cook plays an important role in the practical application of the knowledge of nutrition. It is one thing to know what people should eat and often quite another thing to get them to eat it. Food offered because it is "good for you" will probably be refused, but food that tastes good is certain to be eaten.

A good cook does not regard her work as mere drudgery, but is interested in it and proud of the results achieved. Meals that are properly prepared and cooked are tasty and retain as much of the original food value as possible.

Many people spend a lot of time learning how to make good sponge cakes, but few pay much attention to the way meat and vegetables are cooked. To make them appetising meat and the other protein foods and vegetables need to be cooked just as carefully as cakes.

### Cooking Protein Foods

Cooking at high temperatures makes proteins tough and indigestible. The principle of cooking all protein foods is to keep the temperature moderate or low and to avoid over-cooking.

**Meat** should be cooked with moderate heat. Long cooking at high temperatures causes undue shrinkage and makes the meat tough rather than tender. It is not necessary to expose meat to a high temperature for the first 10-15 minutes of cooking to seal it. It is not advisable to wash meat before cooking, if necessary wipe it with a damp cloth.

**ROASTING** is suitable for tender cuts of meat, such as

Beef: sirloin, ribs, topside.

Lamb, Mutton and Veal: leg, loin, shoulder.

Pork: leg, loin.

**METHOD:**

1. Wipe the meat with a damp cloth, if necessary.
2. Place meat, fat side up, in an open roasting pan. A little fat or dripping may be added if the roast is very lean.
3. Roast in a moderate oven (300-350°) for the whole of the cooking time.

**GRILLING** is a suitable method for these tender cuts.

Beef: rump, sirloin, fillet steak.

Lamb: loin or chump chops, cutlets.

Pork: steak, chops.

Cheaper cuts may be grilled if a meat tenderiser is used.

**METHOD:**

1. Pre-heat the griller.
2. Lay meat on the griller rack. Grill until top side is browned, then season.
3. Turn and grill other side and season.

**BRAISING AND STEWING** are methods of moist heat cookery suitable for the tougher cuts of meat, such as —

Beef: round, topside, chuck, bladebone steak.

Mutton: breast, flaps, neck.

Veal: shoulder, neck chops.

The flavour is improved by the addition of onion, carrots and other vegetables and lemon rind or juice makes veal tasty.

Meat cooked in liquid should be simmered, never boiled.

**BRAISING**

1. Cut the meat into pieces if necessary, and trim off surplus fat; cover thickly with seasoned flour.

2. Brown the meat in a little fat and transfer to casserole or saucepan.

3. Brown the vegetables and add them to the meat.

4. Add a small amount of liquid, either water or stock.

5. Cover tightly and cook over low heat at simmering temperature on top of the stove, or in a casserole dish in a moderately low oven (325°F.) until meat is tender (1½-3 hours).

**STEWING**

**BROWN STEW.** Prepare and brown meat as in braising. Just cover with cold water and simmer with the lid on for 2-3 hours. One hour before serving add diced vegetables. Thicken with flour, if necessary.

**WHITE STEW.** Proceed as above, but do not brown the meat or vegetables.

**PRESSURE COOKING** is a suitable method for cooking pot roasts, braises, corned beef, tongues or tripe.

**LIVER** (lamb's fry or calf's liver) is particularly valuable because it is rich in iron and vitamin B. Calf's liver is an inexpensive meat. Overcooking makes liver tough and tasteless. Liver can be fried, "dry" fried or cooked in a casserole, but whatever the method, it should be cooked at a moderate heat for only long enough to remove the raw appearance.

To prepare liver for cooking, wipe it with a damp cloth if necessary, and cut it into slices. Soaking is not necessary for liver and it may cause loss of some of the valuable nutrients.

**Eggs.** When eggs are cooked the protein sets or coagulates at a temperature well below that of the boiling point of water. Eggs cooked at too high a temperature become hard and tough. Therefore, eggs should be cooked slowly at a low temperature until they are set.

Dishes containing egg, such as custards, curdle if they are overcooked or allowed to boil. This is due to over-coagulation of the protein. A soft or pouring custard that has curdled can sometimes be cleared if it is beaten with a rotary whisk.

**Cheese** is also a protein food and should be cooked with gentle heat. If the heat is too great, cooked cheese becomes tough and stringy.

## **VEGETABLE COOKERY**

Fresh vegetables should be *fresh* when purchased and should show no signs of wilting, tearing or bruising.

### **Rules for the Preparation and Cooking of Fresh Vegetables**

1. Prepare vegetables as near mealtime as possible. If they are prepared in advance put them in a damp cloth, or in a screw top bottle in the ice chest or refrigerator.
2. Wash vegetables under running water. Do not soak them unless they are very dirty, and then do so in salted water for only a short time.
3. Shred leafy vegetables coarsely to reduce the cooking time.
4. Do not add soda to green vegetables.
5. To boil vegetables add them to a small amount of boiling salted water, cover with a tight-fitting lid, and cook for the shortest possible time until they are just tender.
6. Use the water vegetables are cooked in for soups, gravies and sauces.

Observance of these rules helps to retain as much as possible of the mineral and vitamin content of vegetables. A cooked vegetable that keeps its original colour, flavour and texture will also still contain much of its original vitamin C.

Raw cabbage has a delicate green colour, a leafy texture and a pleasant flavour, and these should be retained in the cooked product.

Cabbage over-cooked with soda becomes an unnatural green colour and develops a strong and rather unpleasant smell and flavour.

Overcooking spoils the taste and appearance of green vegetables and cauliflower and makes some of them mushy and difficult to drain before serving.

**Frozen Vegetables** should not be thawed, but added frozen to boiling salted water. Frozen vegetables need to be cooked only a short time, about half as long as the fresh product.

**Commercially-tinned Vegetables** need only to be heated through and do not need cooking. Empty the contents of the tin into a saucepan, cover and heat quickly.

**Pressure Cookers.** Vegetables cooked in a pressure saucepan for the recommended time retain most of their vitamin and mineral content, and the flavour and texture are good.

## **SALAD PREPARATION**

Salad ingredients should always be fresh, and they should be thoroughly washed. Carelessly washed lettuce with dust or sand left at the base or in the crinkles of the leaves is unhygienic and unattractive.

Variety is most important with salads. Any raw, cooked or tinned vegetable and any type of fruit can be used.

Seasoning is important in the preparation of salad vegetables and onion, chives, parsley or mint added to a salad mixture give a distinctive flavour.

Salad vegetables should be fresh, cold, and well drained. A salad is more appetising with some soft or smooth vegetables or fruits served with the crisp ingredients.

When a salad is served as a main dish it should include meat, fish, cheese or egg to provide protein.

## **KITCHEN UTENSILS**

Aluminium saucepans are satisfactory, as they are strong, easily cleaned and the surface does not chip. The theory that aluminium is dissolved off cooking utensils and is dangerous to health is untrue. Vegetables often contain 500 times more aluminium than any that might be dissolved off the saucepan.

Copper saucepans should not be used to cook vegetables because copper destroys vitamin C.

All cooking utensils must be kept perfectly clean. Dirty utensils are unhygienic and they spoil the flavour of food cooked in them.

## **DIET IN PREGNANCY**

Eating the right foods before baby is born not only gives him a good start in life, but protects the mother's health and vitality. A poor diet may result in miscarriage or premature birth, or it may be the cause of illnesses that develop in the child in after years.

A well nourished mother has a better chance of breast-feeding her baby adequately.

## WHAT SHOULD SHE EAT?

The expectant mother's caloric requirements are only slightly increased; that is, the total *quantity* of food should be much the same as usual. But there is a definite need for an increase in some specific nutrients. The expectant mother needs, for instance, 45% more protein, 100% more calcium and 150% more vitamin C than she did before pregnancy.

The diet should be based on the following foods—milk, meat or fish, eggs, fruit, vegetables and wholegrain cereals. Every day something from each group should be eaten.

It is now generally considered that in most cases diet cannot affect the size of the infant. Excessive gain in weight is not desirable; sweet and starchy foods and fats should be restricted so that larger amounts of the essential foods can be eaten. An excessive amount of sweet and starchy food in the diet is also undesirable because it may be the cause of the increased dental decay experienced by many mothers.

The expectant mother should have her three meals at regular times each day. In some cases, generally in the early months, it is more satisfactory to have small meals, with an extra snack in the mid-morning and mid-afternoon. If this is done, the mid-meals should not be large, but they should be nutritious, for instance, a glass of milk with a cheese sandwich. If the expectant mother does not feel hungry at a regular meal time, it is better to have a small meal than to miss a meal altogether. A frequent cause of nausea is simply an empty stomach.

### **The expectant mother needs these foods every day:—**

**MILK:** 1½ to 2 pints daily.

**BUTTER:** About 1 oz. per day. Table margarine is a suitable substitute.

**CHEESE:** 1-2 oz. every day—any kind.

**EGGS:** One or more every day.

**MEATS, FISH, OR POULTRY:** One large serving or more. Liver (lamb's or calf's fry) and kidney are valuable foods. Tinned meat or fish may be used.

**FRUITS:** Two or more pieces. Oranges, tomatoes, papaw and rockmelon are rich in vitamin C.

**VEGETABLES:** Potato and at least two other vegetables.

**BREAD AND CEREALS:** Wholemeal and brown bread are better than white, because they contain more vitamin B. Bread is less fattening than cakes and biscuits.

Wholegrain porridge such as oatmeal, rolled oats or wheatmeal is richer in vitamin B than unfortified ready-to-eat cereals.

For extra vitamin B Weet Harts, Vitos, Wheat Germ, or Bemax may be sprinkled on cereals or stewed fruit. Vegemite, marmite and peanut butter are excessively salty and should not be used in large quantities, but are useful in small amounts.

## **Suggested Menu for a Day**

### **Breakfast:**

Rolled oats, oatmeal or wheatmeal porridge, with vitamin B preparation sprinkled over.

Eggs (poached, boiled, scrambled), or meat, or cheese.

One slice brown toast, with butter.

Tea, coffee or milk.

### **Lunch:**

Meat, cheese or egg: cold with salad or served hot.

Two slices brown bread and butter.

Peanut butter or vegemite.

Fruit.

Tea, coffee or milk.

### **Dinner:**

Large serving of meat or fish.

Potato and two other vegetables.

Milk pudding.

Stewed or fresh fruit.

### **Morning or Afternoon Tea, or Supper:**

Milk drink or fruit, plain biscuit with cheese if very hungry.

### **General Instructions.**

- (1) Have three meals a day at regular times. Do not eat sweet biscuits or cakes, but have a piece of fruit or a milk drink between meals.
- (2) Avoid foods that cause any digestive disturbance.
- (3) Avoid large amounts of salt, or highly salted foods. From the fifth month onwards have salt in cooking only.
- (4) Do not use soda in cooking or take any antacid powders containing soda.

## **LACTATION**

The nutrient requirements during lactation are higher than during pregnancy yet many women fail to pay attention to their diet after the baby is born. There is no need to become over-anxious about food, but care in its selection will be amply repaid by the good health of both mother and child.

It has been shown that it is unwise to force fluids. Milk intake should be maintained at the level of  $1\frac{1}{2}$  to 2 pints per day.

## **YOUR CHILDREN'S MEALS**

Of all groups in the community, children and women during pregnancy and lactation are most in need of good nutrition. The foundation of a strong and sturdy body is laid in childhood. The

adult's muscles, bones and teeth are only as good as the food from which they were built in earlier years.

The **RECOMMENDED FOODS** for children are milk, cheese, meat, eggs, fruit, vegetables and wholegrain cereals. By eating them every day the child comes to regard them as his regular diet and he develops good food habits that last a lifetime. There is no need to prepare special meals for children. All members of the family can have the same basic meals with minor variations to suit the different age groups.

**MILK.** See that each child in the family actually consumes his full allowance and that it is not kept for other purposes. He can take it as a drink, with porridge, and in desserts, sauces and soups. If he is not over-enthusiastic about drinking milk, vary it by flavouring with cocoa, honey, raspberry, strawberry, vanilla essence or caramel, or brighten it with a drop of colouring. Attractive mugs or glasses often help. Powdered milk is excellent as a substitute or as an extra.

**CHEESE.** Serve with salads, in sandwiches, grated on top of cooked dishes, or plain. Cheese is easily digested as long as it is well chewed or grated. Cheese may be substituted for meat.

**MEAT.** Use lamb, mutton, beef or fish. Lamb's fry and kidneys are particularly valuable. Corned beef and minced steak are suitable for children. Sausage mince is usually fatty and may be highly seasoned and is therefore not desirable.

**EGGS.** Serve poached, coddled, scrambled or in an omelette, hard cooked in a salad or hard cooked and grated over a white sauce, as a sandwich filling or in a custard or other dessert. Fried eggs are not recommended for young children.

Practically all **FRUITS** are suitable, if they are ripe and sound. Fruit should be thoroughly washed before being eaten, even if it is to be peeled. For young children, remove any pips or stones and cut out damaged or bruised portions. Stone fruits are quite safe provided they are thoroughly ripe and, of course, eaten in moderation. Prunes and dried apricots provide iron.

Encourage the children to eat all types of **VEGETABLES**, raw as well as cooked. When introducing a vegetable for the first time, cut it into small pieces so that it is easy to eat, and serve only a small portion.

Cooked **WHOLEGRAIN PORRIDGES**—oatmeal, rolled oats and wheatmeal—make good breakfast cereals for children, for they have more than ten times as much vitamin B, as the unfortified ready-to-eat cereals. If an unfortified ready-to-eat cereal is served it is advisable to add a wheat germ product.

**Hard Foods to Bite on.** For the development of sound teeth and healthy gums, it is most important that food supplied to children should be, as far as possible, in a form that requires vigorous

use of the teeth and jaws. Teeth and gums need exercise as much as other parts of the body.

Every meal should provide something hard to bite on such as crisp toast, crusts, apples, raw carrots, nuts, raw salad vegetables, or fruit. It is a good idea to finish a meal with something to clean the teeth, such as a piece of apple, or raw carrot or celery.

**Starchy and Sugary Foods.** Refined cereals and sugars tend to cling to the teeth and are a potent factor in dental decay.

Sugar, jam, honey, golden syrup, sweets and lollies, sweet biscuits, cakes, pastries and sweetened drinks should be kept to a minimum. They do less damage to the teeth when eaten at one of the main meals than if eaten in between.

**Between Meals.** If the children get hungry between meals, let them have a small snack at a regular time preferably a glass of milk with a piece of fruit. If this is insufficient brown bread or wheatmeal or savoury biscuits spread with peanut butter, cheese or yeast extract, and nuts may be given. A hot milk drink or soup is satisfying in winter.

**Foods to Avoid.** Far too often discussions of children's nutritional needs are based on lists of foods that are "bad for them." Actually, there are very few ordinary foods that are harmful to a child, although there are many that he can easily do without. The main thing is to make sure that he has the recommended foods first, rather than to make a lot of fuss preventing him from eating something that is not harmful in itself. Each child is an individual, not a little machine, and he will not conform absolutely to hard and fast rules.

Nevertheless, a child cannot have complete freedom in choosing his food. He has not the knowledge to discriminate, and he has to develop good food habits. But training in good nutrition should be something positive, rather than a series of "don'ts."

These foods are sometimes alleged to be harmful to children, but actually they are quite nutritious and safe:—corned meats, cold cooked meat, kidneys, bananas, stone fruit, the white of egg. Tinned foods are not harmful unless the food itself is unsuitable.

### **Foods that Should be Restricted.**

1. Sweets and soft starchy foods such as cakes, biscuits, pastries, especially between meals.
2. Fried foods, because they are not easily digested.
3. Highly seasoned sauces and flavourings.
4. Any food that is found to upset an individual child.
5. Tea or coffee, except as a flavouring for milk.

**Developing Good Food Habits.** Children need regular meals in a peaceful, pleasant atmosphere. Food likes and dislikes should not be discussed in the child's presence.

Make it easy for the children to enjoy their meals. A sunny, airy room, comfortable chairs and a table of the right size; cups, plates and cutlery that are easy to manipulate, all help to create a pleasant atmosphere.

Children love touches of colour in foods, and red seems to be a favourite. Chopped jelly, hundreds and thousands, grated carrot, tomato slices, or a parsley "tree" can be used for a garnish. Occasionally, use fancy shapes and novel decorations as a surprise.

Aim to train the children to eat a wide variety of foods, without developing fads. Introduce new flavours gradually, together with some food that is known and liked.

If a child does not eat his food, do not fuss or worry or force him to eat it. Remove the plate and give no more food until the next meal. Unless he is ill his natural appetite will usually return by that time.

## **FOOD FOR ELDERLY PEOPLE**

The diet suitable for elderly people does not differ significantly from that recommended for other groups in the community. Many elderly people, however, fail to pay attention to their eating habits.

Decreased activity generally accompanies increase in age, yet some elderly people, particularly those who enjoy their food, continue to eat the same sized meals that they ate in their youth. This results in increase in weight and can lead to obesity which is highly undesirable.

Although thinness in moderation tends to favour long life, some elderly people under-eat to the extreme. This may be due to several factors, such as living alone, lack of appetite, inadequate facilities for the preparation of food, ignorance of food values or faulty teeth. A diet based mainly on bread, butter, jam and cups of tea is quite inadequate.

The diet for elderly people should be based on the recommended five food groups. The amount of protein in the diet should be liberal. The diet should be varied—it is better to eat small amounts of several of the important foods than to satisfy the appetite with one food only. The food to be eaten should be included in at least three meals, and served attractively. Some prefer to have their main meal of meat and vegetable at midday.

Certain elderly people who have difficulty in digesting their food will find it advisable to eat fats in moderation only and to avoid rich and highly seasoned foods.

## **REDUCING DIETS**

We cannot say that any particular food is "fattening" or "slimming." Gain or loss in weight depends, to a large extent, on the total number of calories provided by the food that is eaten. It is very likely that if you eat too much of the foods that are high in calories you will be increasing your total calorie intake above that required and so put on weight. The low calorie foods are vegetables and fruit, so you can eat practically as much as you like of them without increasing your calories too much. The advantage of salads and fruit juices in this respect is not that they have a positive "slimming" action, but that they satisfy the appetite for the time being, without providing many extra calories.

It is most unwise to submit yourself to a strict reducing campaign without adequate supervision. A rigorous diet that cuts down the calories to a minimum will certainly reduce your weight, but it may also leave you with a lowered resistance to infection and possibly an aftermath of other troubles.

A reduction diet that is not recommended is the "Nine Day" or "Eighteen Day Diet," in which periods of rigorous dieting and normal eating are alternated. This is not advisable, as the body is then continually making adjustments both physiological and psychological.

Individuals vary in build, and many people worry unnecessarily about being fat. In general, it is true, those who are overweight are less likely to keep in good health than those of average weight. Insurance statistics and animal experiments suggest that the thin person has a better chance of living to a ripe old age than the fat one. Extreme thinness, of course, is not desirable, either from a health or an aesthetic viewpoint.

It is emphasised that a rigorous low calorie diet is not recommended. If, however, you are anxious to lose a few pounds or you have a tendency to put on weight easily, the diet you require is one that restricts the high calorie or the fat-making foods and yet, at the same time, provides the essential proteins, minerals and vitamins. It is not desirable, in most cases, to lose more than 2 lbs. per week, unless you are under medical supervision.

## **SUGGESTIONS FOR A SAFE REDUCING DIET**

### **Foods not allowed:**

#### **(1) CONCENTRATED FATS.**

Fried foods, potato chips, cream, ice-cream, dripping, lard, oils, nuts, pastries, butter, except a little on bread.

## (2) SUGARS AND STARCHY FOODS.

Sugar, honey, jam, sweet pickles, sweets, chocolates, sweetened drinks, soft drinks and cordials, dried fruits, sweetened tinned fruits, cereals, rich puddings, jellies, cakes, biscuits, thickened gravies and soups, alcohol.

### Foods that should be eaten every day:

Milk:  $\frac{1}{2}$  pint, as a drink, in tea or coffee, or in junket or custard.

Lean Meat or Fish: One or more serves. Have it grilled, steamed, or simmered (not fried) or use the non-fatty part of the roast, without thickened gravy.

Egg: One, cooked any way other than fried.

Cheese: One-two ounces.

Potato: One small, cooked without fat.

Bread: Two-four slices, thinly buttered. Wholemeal or brown is preferable.

Fruit: Two-four pieces, fresh or stewed.

Vegetables: Two or more servings, as salads or cooked.

### Foods that may be eaten freely:

Beef tea, unthickened clear soups, yeast and vegetable extracts, meat extracts, water, tea, coffee, unsweetened flavouring essences, spices, pepper and salt, vinegar, worcestershire sauce, mustard, curry powder, saccharin.

## Sample Menu

**Breakfast:** Orange juice, raw or stewed fruit (no sugar), 1 egg (not fried) or 1 grilled chop; 1 slice of toast, thinly buttered; milk, tea or coffee (without sugar).

**Lunch:** Salad with cheese, cold meat or egg; 1-2 slices of bread and butter; fruit, fresh or stewed; milk, tea or coffee (without sugar).

**Dinner:** Lean meat (no gravy) or fish; small potato, vegetables (not cooked in fat); stewed or fresh fruit; plain custard or junket.

**Regular Meals.** It is more satisfactory to spread the intake of food over the day by having three regular meals than to eat very little, or nothing, for one meal. Restricting breakfast to a grapefruit and black coffee, or omitting it altogether, is not recommended for anyone.

**Between Meals.** It is the between-meal extras that add on the calories. Most people who eat three regular meals do not really need anything else, but if you do feel hungry eat some fruit or have some of the unrestricted foods—a cup of tea or coffee (without sugar) or some clear soup. Drinking unsweetened beverages with meals or between meals has no effect on the gaining or losing of weight; it is the food that goes with it that counts.

**General Hints.** Starch-reduced bread is often recommended as a "slimming" food. This bread contains less starch than ordinary bread, but it has more gluten. Gluten yields the same

number of calories as starch, so that an ounce of each type of bread will have the same calorific value. The only difference is in the texture and the flavour; the processed bread is lighter, so that you get more slices to the ounce. In short, if you prefer the processed bread, use it, but do not delude yourself that you will lose weight by eating it. "Slimming" biscuits and rye bread are in the same category. Weight for weight, they yield approximately the same number of calories as bread.

Fruit for desserts can be served simply as fresh fruit, or as fruit salad. Fruit can be varied in many ways by adding different garnishes, such as desiccated coconut or chopped nuts, in small amounts.

Saccharin may be used for sweetening without providing extra calories, but it is better to use it sparingly so that the taste for sweet things is gradually lost. When sweetening stewed fruit add the saccharin after the fruit is cooked to avoid a bitter taste.

Remember that a reducing diet, like any other diet, must be appetising and interesting. Flavourings and condiments that are not thickened are permitted, and they help give variety. Make good use of the foods that may be eaten freely.

Vinegar or lemon juice are good substitutes for mayonnaise with a salad. Salad dressings made from mineral oil are often served with reducing diets; mineral oils, however, are not recommended, because there is evidence that they interfere with the absorption of certain vitamins by the body.

## DIET FOR THE UNDERWEIGHT

It is much easier for the fat person to lose weight than it is for the extremely thin to gain it. Anyone who is very much underweight or who is losing weight rapidly should consult a doctor, who can decide upon treatment for the individual case.

A diet to increase weight should be based on milk and milk products, meat, eggs, fruit, vegetables and wholegrain cereals. Milk is particularly important; a high calorie drink can be made by mixing powdered milk with plain milk and adding flavouring. For extra calories larger servings of the high calorie foods—fats, cereals and sugar—should be eaten as often as possible.

Indiscriminate eating between meals tends to spoil the appetite, therefore it is better to have mid-meal snacks at regular times as well as the three main meals. Allow sufficient time for meals, try to relax at mealtimes, and take adequate exercise and rest.

Foods rich in vitamin B<sub>1</sub> often improve the appetite. Useful sources of this vitamin are dried yeast, wheat germ, wholegrain cereals, dried peas, dried beans, liver, kidney and nuts.

## FOOD FADS AND FALLACIES

There are probably more fads and fallacies connected with eating than with any other human activity. Many of the beliefs commonly held about food are based on chance happenings, or on personal ideas, rather than on logical conclusions.

Sometimes these false beliefs do no harm at all, but often they are a cause of malnutrition by restricting the variety of food eaten. The basis of good nutrition is to eat, not large quantities, but a wide variety of foods. Those whose meals are restricted by fads make it much more difficult for themselves to be well fed. Furthermore, they usually persuade others to be misled in the same fashion.

**Incompatible Foods.** The theory that it is wrong to eat proteins and starches at the same meal is held with great enthusiasm particularly by devotees of the "Hay Diet." They would prohibit, for instance, the mating of bread with cheese, or meat with potatoes. It is quite unnecessary to divorce these well known couples because "there is not the slightest scientific evidence to back up the Hay theory concerning incompatibility of foods."\* Actually, most foods in their natural state are mixtures of the two groups. Milk, the almost perfect food, contains both protein and carbohydrate in almost equal proportions. Soya beans are 36% protein and 35% carbohydrate.

A similar fallacy is concerned with the mixing of certain foods with fruits and vegetables that are supposed to be "incompatible." A person with a normal digestive system can eat fruits and vegetables in any combination he pleases without any ill effects.

The argument is often advanced that there has been great improvement in particular cases after treatment by such diets. Generally, these beneficial effects ensue because those who have been over-eating eat much less food than usual and because larger quantities of fresh fruits and salads are eaten. But these effects can be gained without taking elaborate measures to isolate different foods.

**Fruits.** Children are sometimes forbidden to eat fruit and milk at the same meal because the fruit causes the milk to curdle. This does no harm at all, since in any case the acid gastric juice curdles the milk as soon as it enters the stomach.

Acid-tasting fruits such as lemons and oranges do not cause "acidity"—in fact, they reduce the acid content of the blood. Nor does lemon juice "dry up the blood."

Bananas do not cause meningitis or any other disease, nor are they indigestible as long as they are ripe.

\* *Journal American Med. Assn.*, Vol. 112, No. 8, p. 762.

**Fruit and Vegetable Juices.** Many juices are useful foods, but they cannot be credited with the wonderful curative powers often claimed for them. No fruit or vegetable juice has a positive "slimming" action; rather are they non-fattening, since they quench the thirst without providing many calories.

**Beverages.** Although drinking with meals has been blamed for indigestion and increasing weight, there is no evidence to indicate that it is harmful. The drinking of moderate amounts with meals tends to increase the secretion of digestive juices and to aid digestion. It can only be harmful if the fluid is used to wash down unchewed food, or if unduly large amounts are taken.

Barley water, beef tea, chicken broth and clear soups have practically no food value. Their value in feeding invalids and children is negligible except as appetisers and to increase fluid intake.

## SOME COMMON FALLACIES

Porridge is heating to the blood.

Meat is bad for pregnant women.

A cucumber must be streaked with a fork to remove poison.

Fish is a brain food.

Vinegar dries up the blood.  
Toast is less fattening than bread.

White meat is better than red meat.

Egg white is bad for the kidneys.

Tomatoes are bad for rheumatism.

## Suggested Reference Books

Australian Institute of Anatomy, Canberra—Food and Nutrition Notes and Reviews.

Cruickshank, E. W. H.—Food and Nutrition.

Mottram & Graham—Hutchinson's Food and the Principles of Dietetics.

Cooper, Barber, Mitchell, Rynbergen—Nutrition in Health and Disease.

McLester and Darby—Nutrition and Diet in Health and Disease.

**Cookery**—The Commonsense Cookery Book.

The Advanced Commonsense Cookery Book.

Whitcombe's Everyday Cookery.

Department of Labour and National Service—Standard Recipes for Industrial Cafeterias and other large food services. (This is recommended for use in any institution concerned with large-scale cookery. It is available at 39 Martin Place, Sydney).

**FREE PUBLICATIONS AVAILABLE FROM THE N.S.W.  
DEPARTMENT OF PUBLIC HEALTH, 52 BRIDGE STREET,  
SYDNEY**

**Booklets.**

Food and Nutrition.

Our Babies (available at Baby Health Centres).

Healthy Motherhood (available at Prenatal Clinics).

Healthy Mouths.

**Leaflets.**

How Shall I Feed Him? (Children's Meals and Pudding Recipes).

Money Saving Main Dishes.

Salad Suggestions.

Sumptuous Sandwiches for School Lunches.

Lunch at School.

It's Lunchtime.

Margarine.

Botulism.

Hints for Economy in Meal Planning.

Children's Tea Dishes.

Emergency Meals.

Advice on Operating Oslo Lunch Canteens.

Diabetes.

**Issued only with the approval of the patient's medical adviser.**

Diet Hints for Peptic Ulcer Sufferers.

Diet Hints for Diabetics.

**Posters.**

Balance Your Diet.

The Right Way to Cook Greens.

A Balanced Lunch Makes a Happy Worker.

School Lunch.

Safe Milk for Your Child.

Expectant Mothers Need These Foods Daily.

# RECOMMENDED DAILY DIETARY ALLOWANCES, 1954\*

Nutrition Committee, National Health and Medical Research Council, Australia.

Subjects	Age (Years)	Calories	Protein g.	Calcium g.	Vitamin A I.U.	Thiamin mg.	Riboflavin mg.	Niacin mg.	Ascorbic Acid, mg.	Vitamin D I.U.
Men	25	3000	65	0.8	5000	1.5	1.6	15	30	—
	35	2900	65	0.8	5000	1.5	1.6	15	30	—
	45	2800	65	0.8	5000	1.4	1.6	14	30	—
	65	2500	65	0.8	5000	1.3	1.6	13	30	—
Women	25	2200	55	0.8	5000	1.1	1.4	11	30	—
	35	2100	55	0.8	5000	1.1	1.4	11	30	—
	45	2000	55	0.8	5000	1.0	1.4	10	30	—
	65	1800	55	0.8	5000	0.9	1.4	9	30	—
Pregnant (third trimester)	—	Add 400	80	1.5	6000	1.3	1.8	13	80	400
Lactating (850 ml. daily)	—	Add 1000	100	2.0	8000	1.6	2.0	16	100	400
Infants	Under 1	60-45 per lb.	1.6 per lb.	0.6-1.0	1500	0.5	0.9	5	30	400
Children	1 to 4	1300	40	1.0	3000	0.7	1.0	7	30	400
	5 to 8	1700	55	1.0	3000	0.9	1.3	9	30	400
	9 to 12	2300	70	1.2	3000	1.2	1.7	12	30	400
Boys	13 to 15	3000	85	1.4	5000	1.5	1.8	15	50	400
	16 to 19	3600	100	1.4	5000	1.8	1.8	18	50	400
Girls	13 to 15	2500	80	1.4	5000	1.3	1.8	13	50	400
	16 to 19	2300	75	1.4	5000	1.2	1.8	12	50	400

\*These allowances are recommended for the planning of practical diets for healthy persons, normally vigorous and living in Australia in a warm temperate climate. The recommendations for infants refer to diets consisting mainly of cow's milk; the values do not necessarily apply to breast-fed infants.

